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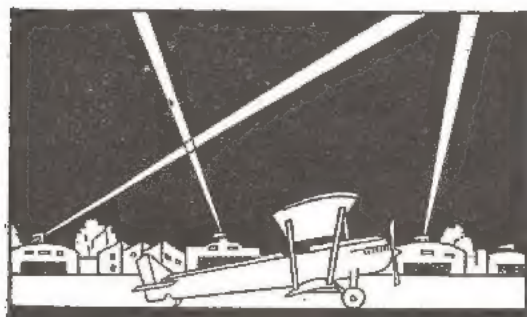
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VOLUME XXXI

DECEMBER, 1938

NUMBER 1

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Strafe of the Skull

By Donald E. Keyhoe

Author of "Riddle Over Rio," "The Gray-Face Ace," etc.

Illustrated by Jon L. Blumner

CHAPTER I

THE MASQUERADER

FOR the third time in an hour, Colonel Ira Jordan put down the phone and grimly marked a red cross on the map which lay on his desk. General "Wild Bill" Thorne, gruff old Air Service Chief, stood at the window of their emergency headquarters, staring across the Third Wing field, at Toul.

"Well?" he rasped, without turning.

"Another ace killed," the Intelligence colonel said wearily. "And the new dump hidden in the Bois d'Audubon was shelled just before noon."

Thorne faced around. Under his shaggy brows, his eyes had a haunted expression.

"Who was the pilot?" he muttered.

"Carter of the 38th Pursuit. He came down in flames near St. Mihiel. The same old story—no one saw what happened. Apparently he was above the clouds—but nobody has seen what got any of them."

Thorne sat down heavily.

"Fifteen aces, shot down like raw replacements!" The shadow in his eyes deepened. "Ira, if only Philip Strange hadn't been killed—" He broke off, and there was a moment's silence. Jordan's haggard face turned toward the calendar on the wall.

"Just a month ago today," he said, in a tone so low that Thorne barely caught the words.

"It's hard to realize he is dead," the general said huskily. "I never had a son, but somehow—"

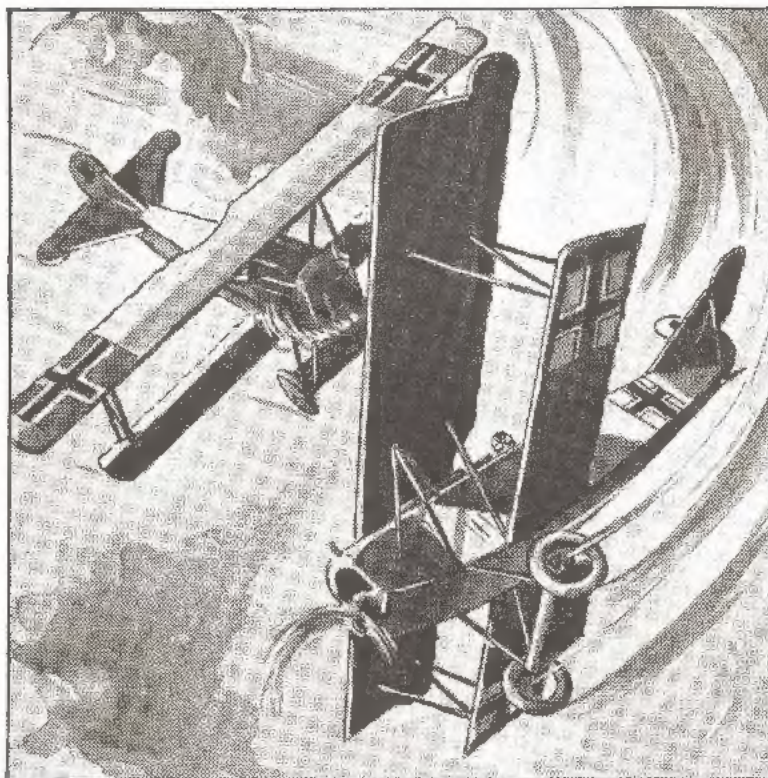
"I know," said Jordan. He seemed about to add something, then stopped. But Thorne did not notice.

"I wish I could have known soon enough to see him—the last time," he said sadly.

"It's better this way," said Jordan, and his voice had an unwonted gentleness. "You can remember him as he was."

Thorne gazed at the floor with unseeing eyes. "If I could only give him some tribute—I hate to think of him in that unmarked grave."

"We had to do it that way," said the Intelligence colonel. "To the A.E.F., the name of Captain Philip Strange had become a symbol. Thousands who never saw him—or would never have recognized him if they had—used to talk about the things he did. Distorted tales, perhaps—



but it would be a jolt for the A.E.F. to learn that their greatest agent was killed by German spies. It's been fairly simple to cover up his death, for only a small number knew him as Strange. Most of those he met knew him as John Neville, the pseudonym he used at Chaumont. When anyone asks, I tell them that Neville is on G-2 business in England. Of course, most of the Staff officers and some in the Air Service know the truth—and von Zenden has spread the story in Germany."

"You're sure he engineered the killing?" queried Thorne.

Jordan's bulldog jaw hardened. "I've absolute proof. Von Zenden was in bad with the German High Command because Strange had balked him so many times. And he was always jealous of Strange's ability at make-up and quick-change. You'll recall that von Zenden was known as the 'Man of a Thousand Faces' on the stage before the war, when Strange was a youngster and his uncle was exploiting him as a boy prodigy. They happened to appear on Broadway together and had a clash. And when they met over here in the war it set off the feud again."

"I remember something about it," Thorne said dully. "But I thought Strange's quarters under your Chaumont house were well protected. I don't see how it happened."

"Von Zenden, it seems, knew about that hide-out," explained Jordan. "I told Strange it was dangerous, but he thought he would have enough warning if they tried

anything, and he wouldn't let me put guards at the secret entrance in the basement of the adjoining house. From what we could learn after he was killed, I think von Zenden meant to abduct him and take him to Germany. There were several spies in the scheme, evidently all dressed as French soldiers. One of them was evidently a master cracksman, for they managed to work the combination of the vault-door at the end of the secret passage. Strange had fixed a tear-gas release, but the spies wore special masks—we found one on a dead German later. When they broke in, they must have expected to catch Strange alone. It just happened that he'd called a

The bullet-ridden body of a wretched Issoudun rookie—and a weird blue skull! They lay tangled in the wreckage of a Jenny trainer on the Toul field. And G-2 Chief Ira Jordan frowned as he viewed them. Why had the bony fingers of Death throttled this inexperienced lad? What was the meaning of that ghoulish skull? And what was a Jenny doing at the Front in the first place? Such questions could only be answered by Philip Strange. But Philip Strange was—dead!



Tex Kane quickly twisted in the pit of his Spad—then started at what he saw. Instead of the pursuing Fokker, it was the Nieuport he had lured into that hook!

meeting of the G-2 air unit, and all but the Jay twins were there.

"I was upstairs in my study, and I heard a commotion and muffled shots. I tried to get below, but the tear-gas spread and drove me clear out of the house. By the time I could flash an alarm to G.H.Q. and get men and gas-masks, all but one of the spies had escaped—and everyone else was dead. The Germans had released cyanide gas when they saw they couldn't abduct Strange."

"The damned fiends!" grated Thorne. "If I ever get my hands on von Zenden—"

HE STOPPED as there came a rap at the door. The Wing adjutant entered, followed by several pilots, among them Tom and Noisy Jay, who had been aides of Captain Strange. Identical twins, these two youngsters had been in vaudeville at the beginning of the war, in a magic and ventriloquist sketch. Their weird sense of humor and ideas of practical jokes had made more than one Staff officer groan, but there was no trace of their usual audacious manner now. They came in quietly, eyes a trifle grim, and stood waiting with the others. Jordan motioned them over to his desk.

"Noisy, you and Tom are the only ones left from the old G-2 air unit. You'll have to train these men and the others I've selected. There'll be no more revenge strafes across the lines."

A mutinous light came into Noisy's eyes, but Tom

slowly nodded, nudging his brother to keep quiet.

"I understand, colonel. This is the way Phil would have wanted it."

"That's right, Tom." Jordan bent over the map. "Now, listen carefully, all of you. There's something rotten going on, and we've got to find the answer. We've supremacy in the air—and yet we've lost forty-two pilots in five days. I've doubled our counter-espionage net in this sector—and in spite of it the Boche knows every new dump, gun emplacement, and supply depot as fast as we put them in and no matter how well we hide them."

Grouped about the map, none of the men present noticed that the door had opened. The man who entered was a tall, awkward-looking figure who would seemingly have been more at home in a cowpuncher's garb than in army uniform. From his worn belt hung two six-shooters, in place of the regulation .45 automatic. And one of the pistol butts carried several notches.

His boots had the same well-used look as his gun belt, and his olive-drab breeches were badly in need of pressing. His face was a mahogany brown, with eyes half-slitted and little crinkles at the corners, as from years of squinting under a blazing sun. A lock of sandy-colored hair hung down at one side of his forehead, giving him a somewhat bucolic look, but his narrowed eyes were shrewdly calculating.

He waited a moment in the doorway, helmet and goggles stuffed in one pocket of his leather flying-jacket, the strings of a tobacco-sack dangling from the other.

GRIPPING NEW PHILIP STRANGE WAR-SKY MYSTERY

Then, as no one turned, he leaned indolently against the door-frame and began to roll a cigarette with one hand.

"You men may as well understand now," Colonel Jordan was saying. "You're going to be in more danger than you ever were in combat work. You'll be the nucleus of the new G-2 air unit which Captain Strange headed. German spies will try to get rid of you, also, to keep our air intelligence at a minimum. If you're caught on the other side, you'll be shot the same as any spy."

The man in the doorway watched the group with an odd interest. Pulling the strings of his tobacco-sack with his teeth, he returned the sack to his pocket and lazily reached for a match. As he flicked the head with his thumb-nail, the match sputtered, and Jordan turned quickly.

"Who let you in here?" he demanded.

"I reckon I'm th' guilty party, colonel," said the other man in a nasal drawl. "Cap'n Tex Kane, from down to th' Casualty Pool, reportin' for duty with th' emergency patrol."

"See Major Dunlap, Room 19," snapped Jordan. "This is a private conference."

"Beggin' yore pardon, colonel," drawled Kane, "but I couldn't help hearin' yore remarks to these here sky-wranglers. I've always sort of hankered to be a spy."

Jordan reddened, and two or three of the pilots grinned.

"I suppose you speak fluent German?" the Intelligence colonel said sarcastically.

"No, can't say as I do," replied Kane. "But I'm right good at pickin' up things."

"Then pick your feet up and get out of here!" roared Jordan. "When I need any help from you, I'll let you know."

Kane sighed.

"Well, I reckon I can take a hint."

He ambled out, closed the door behind him. Jordan glowered at a snickering pilot, turned sourly to General Thorne.

"You've certainly let down the bars in the Air Service, if he's any sample."

"He must be an ace, or he wouldn't have been sent here," growled Thorne. Jordan turned to the Jay twins.

"Check up on that man. I want to know how much he overheard. Tell him I've reconsidered and may be able to use him. Find out if he heard what I said about Strange, and if he did, don't let him talk to anyone until I see him."

THE JAYS hurried out, saw the lanky captain sauntering down the stairs. They followed, waiting to see if he met anyone, but he crossed the road to the Third Wing field and stopped beside a Spad at the end of the line. The ship was oil-spattered, with patches over bullet-holes in wing and tail. A figure astride a bucking bronco had been painted on the side of the fuselage. Kane leaned against the ship, smoking idly, now and then looking up at the fleece-packed sky. Oddly, he no longer squinted, but as the Jays approached he narrowed his eyes to their former half-slitted appearance.

"Th' major wasn't in," he said laconically. "Thought I'd mosey out an' wait till after I'd put on th' nose-bag. It's gettin' on to noon, ain't it?"

"Close to it," said Tom. "By the way, Colonel Jordan thought it over, and maybe he can find a way to use you, after all."

"Well now, that's right nice of him," drawled Kane. "Sort of changes his mind in a hurry, don't he?"

"He's been pretty much upset," explained Tom. He hesitated. "I guess you heard him mention Captain Strange?"

Kane flipped away the butt of his cigarette, took out sack and papers and began to roll another one.

"Come to think of it, I reckon I did. Sounded kind of like he'd come to th' end of his trail."

The Jays looked at each other. Kane finished rolling his cigarette, lit it, slowly exhaled.

"Anyways, what's all the fuss about? There's plenty of good men left what can ride a Heinie's tail."

Noisy's eyes blazed. "He was the best pilot on the Front! He'd have been the leading ace if he'd got credit for all the Boche he shot down—and he didn't have to wear any notched guns to show how good he was!"

Kane looked down, kicked a pebble with his foot. "Sort of gettin' riled up, ain't yuh, son?"

"Don't call me son!" Noisy said furiously.

Kane gave him a mild glance.

"I wasn't aimin' to start no ruckus. But this here fellow Strange was just one man, after all."

"One man?" exploded Noisy. "He was *ten* men in one! He spoke about a dozen languages, and he was an expert at make-up. He could take one look at a map and remember everything on it. He was a concert violinist when he was thirteen—he could have been as good as Kreisler if he'd kept at it. He'd been all over the world—studied just about everything—medicine, hypnotism, Yoga—"

"Huh?" said Kane. "Now what might that be?"

"It's a Hindu system for controlling the mind and the body," snapped Noisy. "You wouldn't understand it if I explained it."

"Reckon not," drawled Kane. He glanced at a pilot who had hurriedly climbed into a Nieuport next to the Spad. As he saw the man's face he straightened up, and for an instant his right hand hovered near the butt of his notched pistol. Then, as though thinking better of it, he leaned back against the Spad's wing.

"Funny how yore mind slips a cog now an' then. Somewheres or other, I've seen that hombre in th' Nieuport, but I don't rightly place him."

"His name's Brown," said Tom Jay, curtly. "He's a new courier pilot for Fourth Corps."

"Nope," said Kane. "That wasn't th' name. But he shore is a dead-ringer for that other cloud-wrangler, exceptin' this one's got a mustache. Got th' same sort of square look at th' back of his head, an' th' same thin nose."

"Well, what of it?" Tom said. "Lots of people look alike—and I don't mean twins, either."



KANE did not answer. He was watching Brown as the man leaned out of his pit and snarled at a mechanic. The ackemba swung the prop, but the Hispano only coughed. Brown swore at him.

"Hurry up, you fool! I've got to be at Chaumont in thirty minutes."

The mechanic gripped the prop again, but before he could jerk it through there came a sudden droning roar from above the clouds. Kane watched Brown's gaze leap skyward. Through the roar of a diving plane there came the faint, sinister pound of machine-guns.

The muffled clattering ceased, then a ship plunged down through the clouds. It was a JN-4 trainer—one of the few Jennys sent over for testing—and as the men on the ground stared upward it fell off into a spin and came whirling down toward the field.

"He's going to crash!" yelled Tom Jay.

The mean of the JN's wings was drowned by the shrill howl of the field siren. Ambulance and crash-truck squads dashed to their machines, and Wing officers and soldiers ran out from nearby buildings. The plane struck with a grinding roar at the opposite side of the field. The sound was still echoing from the hangars when the Nieuport's engine sputtered to life.

"Pull the chocks!" Brown shouted at the mechanic. "I can get there first—maybe save him if the ship burns!"

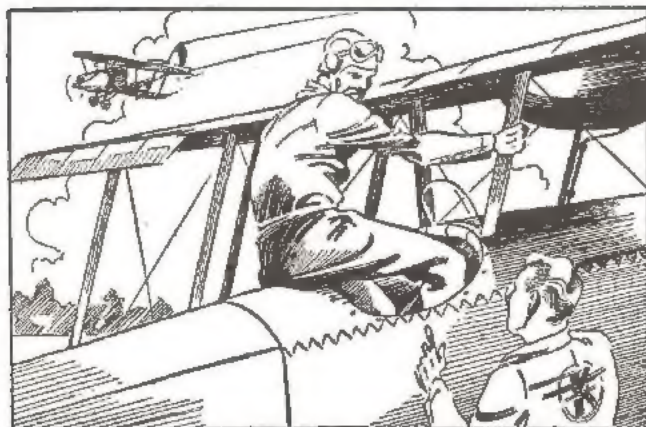
Kane started toward the Nieuport, but it thundered out onto the field before he could reach it. He wheeled, sprang onto the running-board of the ambulance as it careened past. The Nieuport was taxiing swiftly, tail up, two hundred yards ahead. He watched it slacken

(Continued on page 52)

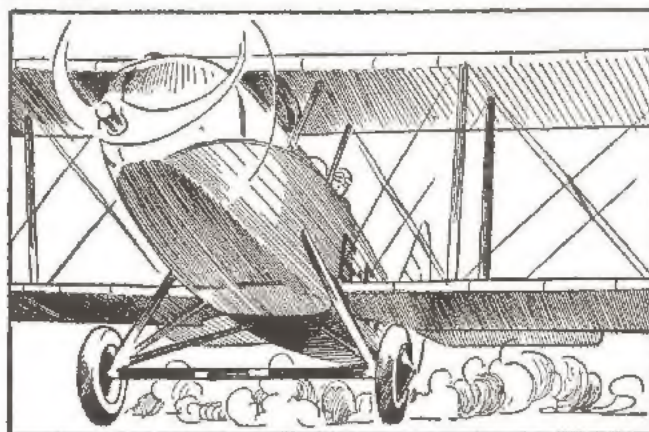
They Had What It Takes

XXIII—BERT HINKLER—THE LIGHT PLANE ACE

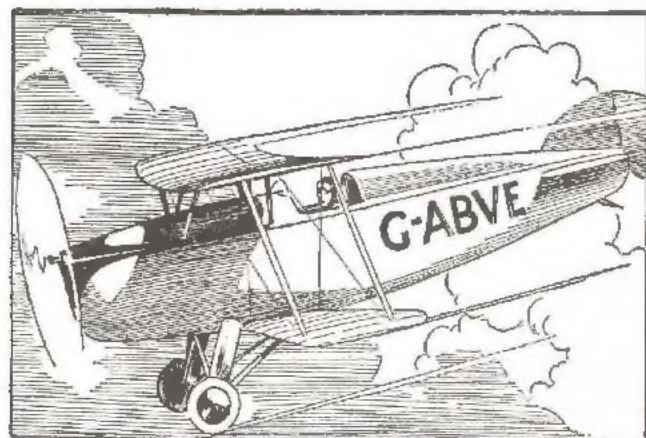
By ALDEN McWILLIAMS



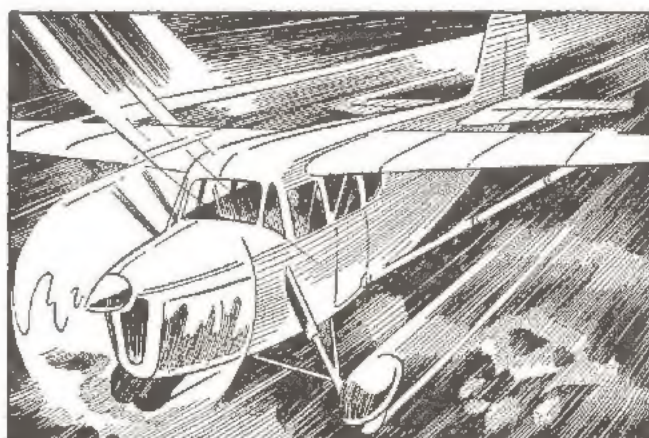
1—Herbert John Louis Hinkler, tagged "Bert" for the sake of simplicity, was born at Bundaberg, Australia, in 1892. He developed an interest in aviation when in his 'teens, building and flying experimental gliders during 1911 and 1912. But he really did not take up flying seriously until 1920, when he began staging demonstration hops in an Avro "Baby."



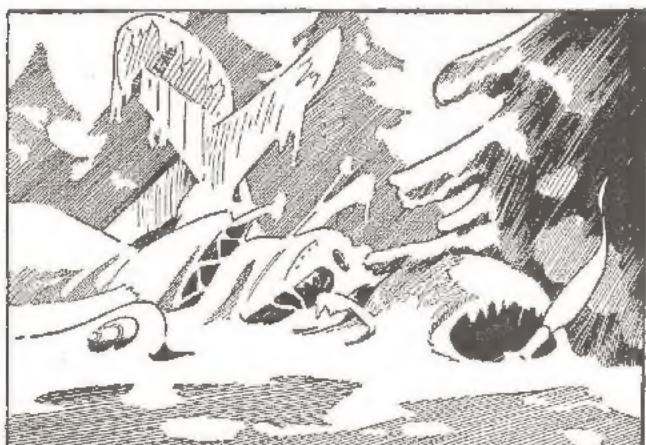
2—Shortly thereafter, he flew his little Avro non-stop from London to Turin, Italy, a distance of 650 miles, in 9½ hours. In those days, needless to say, such a deed in the small-ship category was truly striking. Then for the next seven years, Hinkler was a test pilot for the Avro firm, and during this period he won several prizes in flight competitions.



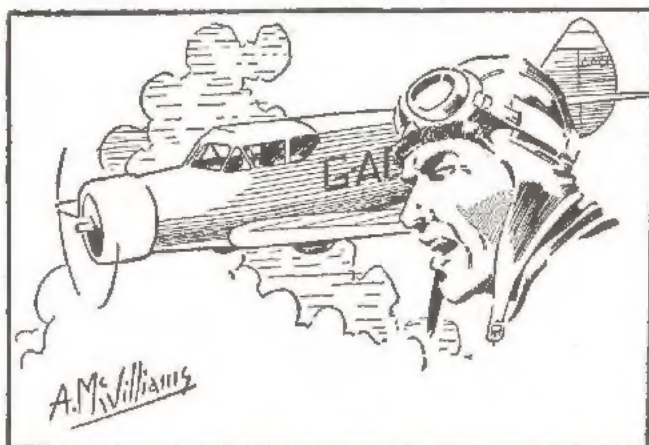
3—The year 1925 saw this expert pilot travel to America as a Schneider Cup team racer. It was in 1928, however, that he turned in his most lauded feat. This was his light plane (Avro "Avian") solo hop from England to Australia which lowered the record from 28 to 15½ days. The Royal Australian Air Force then made Hinkler an honorary Squadron Leader.



4—Once again the Aussie flyer jotted a great flight into his logbook when, in 1931, he flew another small ship—a D.H. "Puss-Moth"—from Brazil to Africa. Part of a round-about New York-to-London trip, this amazing 2,000-mile dash was the first solo crossing of the South Atlantic. And marked by very bad weather, it certainly was extraordinary.



5—Then came tragedy! For in 1933, on a new England-to-Australia record attempt, Bert Hinkler roared into a raging snow storm over the Italian Alps—and vanished! Anxiously, the world awaited news of the famed skyman. But none came—until, full three months later, his body was found in his wrecked plane on a snow-swept mountainside near Arezzo.



6—Little Bert Hinkler—he was but 5-feet tall, though staunchly built like a boxer—was said to have had "a compass in his head." His numerous awards, notably the Segrave Trophy, Oswald Watt Gold Plaque, Britannia Challenge Trophy, and Air Force Cross, evidenced his skill. Indeed, many authorities rank him among the half dozen greatest flyers in history.

Jacqueline Cochran hurriedly climbs into her re-fueled Seversky on the Cleveland field. Next stop, New York—and a new women's record! Nope, that unlucky "13" didn't bother her a bit!



National Air Race High Spots

Once again, fans, that crack sky racing reporter and cameraman, Burton Kemp, is back with us—this time to relate the real shop-talk story of this year's thrill-packed National Air Races! Yep, and he's got just the dope here that you F.A. readers like—pertinent info on the pilots, ships, races, speeds, and purses, together with a select gallery of photos that take you right out onto the field!

* * *

By Burton Kemp

Flying Aces Air Race Correspondent

CONTESTANTS in all events in the 1938 National Air Races at Cleveland, September 3 to 5, had but one thought in mind—to smash all the records. That they succeeded quite well is evident when we realize that the only record that didn't fall was the speed standard in the Bendix trans-continental dash, which was greatly slowed up by tricky weather.

Even with this handicap, however, Jacqueline Cochran won the L.A.—Cleveland leg in very good time and went on to set a new women's coast-to-coast record. Then Tony LeVier and Roscoe Turner rounded out the rest of the program by circling the pylons in the Greve and Thompson events in the fastest time ever—to beat Detroyat's records of 247 and 264 m.p.h.

Many new pilots and planes were on hand, as well as the cream of the old crop. And all are listed in our detailed tabulations (page 11) together with the manner

in which they fared in the gruelling contests. Because the actual race program was limited to three days, an additional three days preceding the events were scheduled as a qualifying period with a minimum speed of 200 m.p.h. for the Greve and 225 m.p.h. for the Thompson event as the requirements. These time trials proved exceptionally exciting, although they were marred by one serious accident and a few minor crashes. Russell Chambers, Pacific-Coast flyer who earlier this year had competed in races in the West flying his home-built special, was forced to slide the little ship into a squash patch on the first day, receiving head injuries, but being the first man to walk away from a crash off the regular landing field in air race history. Chambers hurried back to the scene of activity when he appeared to be in fine shape but for a head cut. Unfortunately, however, an infection set in shortly thereafter. And after a collapse on the field two days later, Chambers succumbed.

Because of its tiny size, much attention was attracted by the Pobjoy-powered Flagg low-winged special which had only 13 feet of wing to keep it in the air. But Pilot McLain soon found that this short span made the ship very hard to control in flight. On coming in for a very fast landing, Mac's little job did an over amount of bouncing. Result: The ship was slightly smashed on one wing tip and was withdrawn from further competition. Though the Flagg's retractable landing gear failed to work in the air, it nevertheless stood up well under the extreme shock of landing, thus minimizing the damage. So small was this little plane that the gas

tank was carried beneath the pilot's headrest, and oil was even farther to the rear of the ship. "Just not enough airplane," was McLain's crisp decision on this midget racer. And in passing, it may be recalled that this ship cracked up last year with Tony LeVier at the controls.

Another plane which failed to pass muster was the remodeled *Miss Los Angeles* entered by Marion McKeen. In fact, we predicted in these pages last year that this craft



Left: And now, lads, here's Tony LeVier, winner of the famed Greve Trophy Race. Our camera caught him just as he was stuffing cotton in his ears prior to his take-off for that event. Left below: Here we see a colorful view of the central grandstand during the aero classic. Right below: Whether you had a pushcart or a plane, parking space at Cleveland was at a premium. This scene shows flocks of aircraft corralled between the runways on the commercial side of the field. Hundreds more were stored in, and to the rear of, the over-taxed hangars.



needed considerable cleaning up if McKen was to have any success in keeping pace with the newer and faster creations. Appearing for the first time in its new version, the plane carried a full cantilever low-wing with a fully retracting landing gear. The latter proved to be stubborn in operation, necessitating a risky belly-landing by McKen after more than 30 minutes of vain effort was made to lower the undercarriage.

Although the plane was only slightly injured, McKen did not try to repair it for the racing. In truth, he was extremely happy that he had come out of his jam landing without a scratch, and he quickly declared that *Miss L. A.* had flown for the last time with a retractable (?) gear.

While retracting gears are almost perfect in operation on larger ships, it has been discovered at Cleveland that the smaller and lighter versions needed on little racers were very undependable and caused a great deal of trouble in nearly all cases where they were used.

Delgado's *Flash* also had seen quite a bit of changing since last year, but it did not perform up to prophecies ventured following its setting of a world record for its type over a cross-country course. Although qualified at over 220 m.p.h. for the Greve event by Roger Don Rae, it was not on the line at starting time, since the regular pilot, Clarence McArthur, did not qualify to fly the ship.

Not winning any prizes or flying in any of the races, Roger was still one of the busiest men at the field and qualified two other ships, Folkerts' latest creation and Keith Rider's new *8 Ball*. The Folkerts, which was very much like the late Rudy Kling's top money winner of last year, got around in quick time. But when violent wing flutter suddenly developed, it looked like a flapping-wing creation. And once the ship was perched on the ground after this sad exhibition, it was decided to leave it there. Thus, Joe Jacobson lost his mount for the races, until he arranged to fly the *8 Ball* after it had first qualified with Rae at the controls. Keith Rider produced this "pool table special," and it is typical of his own distinctive design.

To go on with our story, Dave Elmendorf's racer of two years ago was remodeled by Marcoux (who also fixed up Ortman's Keith Rider, and it was entered by Ortman as the *Jackrabbit* in the Greve. But when it barely made 200 m.p.h. to qualify, it proved ineligible for the Thompson race, in which Elmendorf had planned to fly it against Ortman in the larger Marcoux-Bromberg Twin Wasp Jr. racer.

The old Keith Rider *Bumblebee* was back in competition, now tagged as the Bushey B&M-1, with George Dory, a newcomer from the West Coast, as its pilot. When a connecting rod of the Menasco engine broke on the 13th lap of the Greve race, however, Dory suffered serious head injuries and a broken back. Landing his ship in a dead-end suburban street. His motor almost torn from his plane, he battled bravely to avoid children playing in the street, and great credit is due him for succeeding. He sacrificed his own chances in the interests of the youngsters.



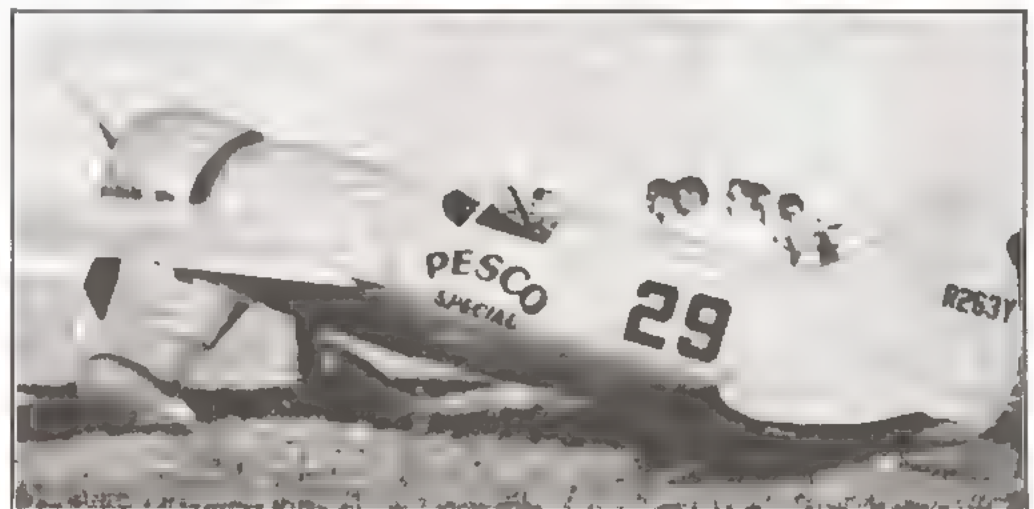
Above: This is a thrilling sample of the 'writing' spectacles staged each day by the four skul. Three of the smoke-streakers may quickly be spotted in the photo. Puzzle. Can you find the fourth? Right. You can't have real races without pylons and we figured if a article wouldn't be complete, either, without a shot of one of the brilliantly checkered Cleveland sky-racing markers. So here you are!



Right: Roscoe Turner "the dashing Thompson Race champ!" Not only did he reel off a decisive victory, but in doing so he took the pylons at an

speed that tossed Detroit's record into limbo. This photo shows

and captures the moment when Roscoe Turner's "Pesco Special" was brought to this side view speedster





Shown above is Keith Ridger's *Jeep*. That most of the *Jeep* pilots refused to end up behind it, but nevertheless Joe Jacobson managed to top 3rd place in the Greve and 5th spot in the Thompson with this job.



And this is Art Chester's closely-designed *Goon*, 2nd place taker in the Greve. It's the successor to his famed *Jeep*. But what'll Art do for ship tags after he uses up all the names created by Cartoonist Segar?

NEXT, we note that this year Harry Crosby finally arrived with one of his racing creations, the Crosby CR-4. He competed in both closed-course races, too, but he had trouble each time, due to extreme heat plus considerable exhaust gas which entered his cockpit from a broken exhaust manifold.

Art Chester and his just-completed *Goon*, among the favorites at all times, turned in a good performance even though hampered by minor difficulties. The landing gear proved troublesome and kept the plane from hitting its real top speed. Meanwhile, however, the plane's French Ratier racing propeller helped considerably in keeping this job in the thick of things. Chester's design was seen throughout in this plane, and it should be a worthy successor to the famed *Jeep*.

Schoenfeldt's *Firecracker*, with Tony LeVier as pilot, was in really top form and continued the fine showings it had made at the Pacific Coast races earlier this year.

Because of trouble encountered in qualifying by a lot of the ships, both the Greve and Thompson races started with the entrants being less than the number of prizes offered. The Greve was scheduled to pay off eight places, with the first ten ships winning prizes in the Thompson.

The Greve race found LeVier and Chester jumping right into the lead, with the former's *Firecracker* besting Chester's *Goon* for the first few laps. Eventually, Chester put himself in the coveted lead-snatching position, and he did cop the front spot from time to time during the middle part of the race—only to have LeVier quickly regain it whenever he did.

Chester would gain on the *Firecracker* by flying a race very close to the pylons while LeVier went slightly wider and at a little more altitude. Then, after this see-saw game of leadership had taken place six times, the planes were virtually tied on their entrance into the 15th lap. But here, Chester cut inside a pylon on the back stretch—and as

he doubled back to circle it and prevent disqualification, LeVier forged far ahead!

More drama was in store, however. For a little later in the race, LeVier eased up slightly to give his motor as easy a trip as possible—not knowing that Chester had been only momentarily dissuaded in his fight for the lead. The *Firecracker* pilot did not find it out until Chester swept past him immediately in front of the roaring grandstand crowd on the next-to-last lap, number 19.

Realizing that first place was about to be grabbed from him, LeVier opened his engine wide on the last lap. That proved all that the *Firecracker* needed, and so Chester was destined for second place after LeVier passed him for the final time on the back stretch.

Although victorious with a new 250 m.p.h. record, LeVier nevertheless was to meet with great disappointment on landing his little yellow special. Striking a bump in the field, the ship careened from side to side and one of the wing spars gave way. The landing gear leg fastened to this spar then collapsed, and the plane skidded over the ground on the bottom of the wing and fuselage. This set-back prevented LeVier from flying in the Thompson contest on the next day, for he didn't have sufficient time left to repair his ship.

While LeVier and Chester were having the thrilling time of it just described the other four Greve contestants were continuing to circle the course. Crosby had taken third place to lead Jacobson, Ortman, and Dory in that order. The last named, after taking off last and trailing for many laps, failed to show up at the grandstand pylon on the 14th circuit. Observers realized that something untoward had happened, and later it was reported that he crashed on the back stretch. Meanwhile, Crosby was forced to land after his 13th lap when his motor began

to fail after he had struggled along for some time not only with gas fumes but also with a fire which was eating back into his



In this group of photos we present four personalities of the big sky show. Left to right they're: Mike Murphy, top-notch stunt man and leader of the Linco Aces; Earl Ortman, who bagged 2nd in the big Thompson classic and 4th in the Greve; Keith Ridger, demon designer of racing planes; and Emil Kropl, who duplicated the antics of an Autogiro in his queer, slot-and-flap garnished Fieseler "Storch."

PILOTS AND PLANES IN GREVE AND THOMPSON EVENTS

GREVE TROPHY RACE

(Planes with engines of 549 cu. in. displacement or less)

Pilot	Plane	Engine	Cu. In.	D. C. No.	Ship Colors (1)
Harold McLean	Flugr Special	P. J. J. Niagara	177	NX 88 Y	Blue & Gold, white trim
Russell Chambers	Chambers Special	Menasco B-4	328	NX 65 Y	Al. yellow
George Dory	Hushey B&M-1	Menasco C-4S	363	NX 84 Y	All aluminum
Earl Ortman	Marcoux-Bromberg Jackrabbit	Menasco C-4S-4	444	NX 274 Y	Black fuse, yellow wing
Harry Crosby (2)	Crosby CR-4	Menasco C6S-4	44	NX 92 Y	Alum. fus., blue wing
Art Chester (2)	Chester Goon	Menasco C6S-4	544	NX 93-Y	Al. cream
Joe Jacobson (2)	Keith Rider & Ball	Menasco C6S-4	544	NX 96 Y	Al. light blue
Marion McKeen	McKeen Miss Los Angeles	Menasco C6S-4	44	NX 255-Y	Red, gold trim
Tony LeVier	Schoenfeldt-Rider Paceraker	Menasco C6S-4	544	NX 241-Y	Yellow, red trim
Roger Dor-Rae	Delcade Flash	Menasco C6S-4	44	NX 62-Y	Black, white trim
	Forrests Special	Menasco C6S-4	544	NX 284 Y	Red, blue trim

THOMPSON TROPHY RACE

(Planes with engines of 1850 cu. in. displacement or less)

Pilot	Plane	Engine	Cu. In.	D. C. No.	Ship Colors (1)
Steve Wittman	Wittman Special Chief	Curtiss D-12	1145	NR-19684	Reg. aluminum nose
Earl Ortman	Marcoux-Bromberg	Twin Wasp Jr	1585	NX-14215	Yellow fuse, black wing
Joe Mackey	Wedell-Williams 44	Hornet	1790	R-61-Y	Gold
Leigh Wade	Military Aircraft Special	Twin Wasp Sr	1830	NX-2491	Blue fuse, yellow wing
Roscoe Turner	Laird-Turner LTR-14	Twin Wasp Sr	1830	R 264-Y	Silver gray
Leand Williams (3)	Pearson-Williams Mr. Smoothie	Curtiss Conqueror	2869	NX 84 Y	Red, gold trim

Notes to above tables (1) These details included to enable future identification and as an aid to memory.
(2) Also competed with this ship in the Thompson finals
(3) Appeared at tied but not tuned up in time for races

cockpit. Yep, for Harry C. the Greve was *too* hot!

Jacobson then took third place and held it. And finally Ortman was flagged down for fourth place after 18 laps, at which time he was the only one left in the air. After landing, both Chester and LeVier exhibited a film of grease and oil on their respective windshields which certainly must have decreased their visibility greatly.

IN THE LENGTHENED Thompson grind, the favorites once again supplied the race dramatics. But this time the winners were decided somewhat earlier than in the Greve. Earl Ortman jumped off to a lead on the take-off. And he held it for five laps while Turner remained a few hundred feet in his wake. But on the sixth lap, Turner moved up to make it a tie then took the lead at the start of the seventh.

From this point on, Turner was never headed. He always kept pulling a little farther ahead of Ortman as he rounded the pylons at the new record speed of 283 m.p.h. Turner's ship, incidentally, was the same one which he flew for the first time last year, and it had only minor changes, one of them being a pair of pants over the wheels. Ortman, too, flew the same ship in which he finished second last year.

Second was Ortman's spot again this year—and he had to grit his teeth to get it, for toward the end of the race his oil line split and he completed the grind almost blindly and at a slower pace. Guided into a landing by radio men, he was of the opinion that most of his prize money would have to go to the purchase of a new engine, since he feared that lack of oil practically burned up the

(Continued on page 61)

BENDIX, GREVE, AND THOMPSON EVENT RESULTS

BENDIX TROPHY RACE

(Los Angeles to Cleveland with added lap to New York for leaders)

Place	Pilot	Plane	Speed (M.P.H.)	Prize Money
1st	Jaqueline Cochran	Seversky	249.74	\$9,000 (plus \$2,500 woman's prize and \$1,000 for being first to New York)
2nd	Frank Fuller Jr	Seversky	238.64	5,000 (plus \$800 for being second to New York)
3rd	Paul Mantz	Lockheed Orion	206.579	3,000
4th	Max Constant	Beechcraft	199.830	2,000
5th	Ross Maczey	Beechcraft	181.842	1,000
	John Hinchey	Spitfire		(Landed before 6 p.m. deadline but finished out of prize money)
	Lee Gehlrich	Wells Williams		(Forced down near Cleveland)
	Frank Cordova	Rebecca		(Forced down en route)
	Robert Perlick	Beechcraft		(Forced down en route)
	George Armistead	Gee Bee QED		(Forced down close to start)

GREVE TROPHY RACE

(200 miles comprising 20 laps of 10 mile course)

1st	Tony LeVier	Schoenfeldt-Rider	240.526	\$10,000 (plus \$2,000 for new record)
2nd	Art Chester	Chester Goon	240.10	5,000
3rd	Joe Jacobson	Keith Rider & Ball	218.78	3,000
4th	Earl Ortman	M-T Jackrabbit	192.803	1,000 (flagged down after 18 laps)
	Harry Crosby	Crosby CR-4		(Landed after 18 laps)
	George Dory	Hushey Special		(Crashed on 13th lap)

THOMPSON TROPHY RACE

(300 mile free for-all comprising 30 laps of 10 mile course)

1st	Roscoe Turner	Laird-Turner LTR-14	283.419	\$18,000 (plus \$4,000 for new record)
2nd	Earl Ortman	Marcoux-Bromberg	269.718	5,000
3rd	Steve Wittman	Wittman Special	259.187	3,000
4th	Leigh Wade	Military Aircraft Special	249.842	2,500
5th	Joe Mackey	Wedell-Williams	240.628	1,000
6th	Joe Jacobson	Keith Rider & Ball	214.570	1,400 (flagged down after 27 laps)
	Art Chester	Chester Goon		(Landed after 20 laps)
	Harry Crosby	Crosby CR-4		(Landed after 10 laps)

Happy Hunning Ground

A HEAP FUNNY "PHINEAS" WHOOP FEST

By Joe Archibald

Author of "Skyway Robbery," "Heir-O-Bats," etc.

With Illustrations by the Author

DURING the big tiff known as the World War, the Potsdam propaganda prodigies scouted the very plausible theory that an army travels on its stomach. The Kaiser's skullduggierians, from the very first day that Jerry doughs took a short-cut across Flanders, worked on the idea that an army really meanders along on its morale.

So Heinie newspaper photographers were commissioned by Wilhelmstrasse wise men to go out and fake batches of pictures portraying terrible atrocities behind the lines. Limey, Frog, and Yankee uniforms were draped over store dummies which were snapped in significant postures that would have thrown a scare into a family of gorillas. The pictures showed Allied airmen what would happen to them if they should be caught on Heinie real estate.

There was a time early in 1918 when a whole flock of such pictures was dropped out of a Jerry Rumpler near Vaubecourt. It was on the very same day that Chaumont's Sam Browne-belted brass hats got jitters from a certain bit of information that came to them from the Intelligence Corps. Three Russky soldiers had turned up in a batch of prisoners near Mont Sec—and one of the Steppe sons had told his captors that his countrymen would be represented in the Heinie backfield before long and that they would outnumber the fish eggs in a barrel of caviar.

The propaganda photos arrived at the Ninth Pursuit Squadron outside of Bar-le-Duc in time for mess. The gory snapshots took away the appetites of all Major Rufus Garrity's buzzards—that is, with the single exception of Lieutenant Phineas Pinkham, Iowa's illustrious contribution to the U. S. Air Force. Phineas took a look at one of the masterpieces and did not blink an eye. It was the picture of a Frog flyer hanging by his thumbs and with three bayonets inserted into various parts of his torso.

"Haw-w-w-w!" Phineas yipped. "That Frog is wearin' a Yank's skypiece! An' look at his hair. You can see the wind is blowin' the trees in back of him but his hair isn't even ruffled! It's a fake!"

"Oh yeah?" Bump Gillis, long-suffering hutmate of the scion of the Pinkhams, snorted. "Don't kid me. I've heard what they do—they blood-thirsty bums. Look at this picture here—ugh. They got the guy tied between two planes an' the Fokkers are takin' off in opposite directions—aw-w-wk! G-Goomer, git me some paregoric or somethin'."

"Aw you're a sissy," Phineas sniffed. "And as for them Russians, why if they came over to fight for Germany, who'd stay home and keep the revolutions going,

huh?" He looked sidewise at the Old Man and then said: "But if it's true, lookit how fresh the vodka bums will be. They've had a long rest since they left the Allies flat. They ought to be in the pink. I'll bet there's six million of them beavers ready to fight an'—"

"Shut up!" the Major roared, as Phineas beamed at his success in getting the C. O. more riled than usual. "If anybody else shows me any more of these things, I will fracture his skull!" he hollered, shoving Bump Gillis out of his chair when the Scot showed him another grisly picture of a couple of Yankee doughs tied to a keg of gunpowder. A grinning Kraut had been snapped in the act of lighting a fuse that snaked away from the goodbye dust.

Lieutenant Pinkham helped Bump up off the floor and then he went to his hut. Plumping down on his cot he began to go through a stack of newspapers he had received from relatives back home. One of the journals, a sports section from a Sunday edition, drew his particular attention. Reading the headline, which referred to the Milwaukee and Indianapolis ball teams of the American Association, the Yank's homely face split open in a grin that would have permanently dislocated the jaws of a hyena.

"A gander can take his sauce and dish it out, too," he chuckled as he tore out the piece he wanted and put it in his pocket. "I will put this in a corned willie can an' weight it with a rock."

A few minutes later, Phineas ambled out of the hut and across the tarmac toward "A" Flight's hangar. In one corner of the Spad garage he found his old bicycle. He wheeled it out, hopped aboard, and pedaled off the drome. Close to midnight he came back to the drome afoot, walking like a G.A.R. veteran loaded from collar bones to ankles with inflammatory rheumatism. At intervals, the returning prodigal paused to explore various pained parts of his anatomy. He gave vent to "ouches" on each venturesome pressure on his bruised empennage.

"**A**" FLIGHT went out the next morning on schedule. Captain Howell and the rest of the early-go buzzards wondered about Lieutenant Pinkham while they were sipping early morning java. The miracle man of the squadron looked a little pale around the gills, and when he eased his bruised frame gingerly into the pit of his Spad, he screwed up his face in such a gargoylesque pattern, that Bump Gillis scratched his helmet and mumbled to himself.

"The crackpot got in late last night," Bump ruminated. "I remember that much an' I'm dam' sure he had a bag of somethin' with him, but I must've gone to sleep again before he put it away. Now I wonder what ails that halfwit? Someone musta given him a going over."

"A" Flight thundered toward the front. And Bump Gillis, Captain Howell, and two other Spad pushers felt a touch of jitters as they skimmed over a sea of



"Himmel!" yipped von Hamhockz. "Der savages take der scalps mit!"



"Ugh!" grunted Chief Spotted Elk. "Pile fire wood around stake while I takem scalp!"

clouds. They could not banish pictures from their minds. They were certain that their ends would be horrible ones if they were forced down behind Kraut ditches.

Their morale, therefore, was a trifle shot when they went slam-bang into a *staffel* of Vons over Mars la Tour. Howell got tagged on the blind spot two minutes and three seconds after the brawl started, and he got out and headed for Bar-le-Duc with half the meat eaten off the Spad's wishbone. Bump Gillis got cornered by two Tripes and he took plenty of cuffing around by Spandau lead before he picked out an exit in the ceiling and hurried downstairs.

Four Vons were chasing Phineas. But they got discouraged when the pilot from Iowa went down so low that he could have picked daisies by leaning out of his pit. Phineas then vaulted an Alsatian church, hop-skipped and jumped over a half mile of Boche linoleum, and flattened a thousand Boche doughs who were moving along a road. Lead flew up at him and most of it missed.

Then Garrity's acute pain in the neck finally dropped a corned willie can upside and it almost made a permanent idiot out of a Jerry Herr Oberst who was standing near a big jalopi. Phineas threw something else, too, and it whanged against a scurrying Heinie dough's coal hod, sending up a loud ringing sound.

When the Kraut brass hat sat up and pawed at the spots that were dancing in front of his optics, Phineas was again climbing and heading for Yankee skies with a Hisso that missed more than a cross-eyed man aiming at clay ducks in a shooting gallery.

"Himmel!" the Herr Oberst

gulped, massaging his clean-shaven noggin. "*Was ist das!*" With the help of two Heinie non-coms he clambered to his feet and one of them handed him the missile that had scattered his marbles. Across the yard came another conked Rhine whiner carrying a strange hatchet and his knees buckled a little.

The Herr Oberst dumped the rock out of the corned willie tin and a piece of newspaper came with it. Black Yankee print hit him in the face and after he had read it he wished he had never taken English lessons at Heidelberg.

"*Ach du Lieber!*" the bullet headed Junker squawked. "*Donnervetter! Der biece of Amerikaner Zeitung says—Gott!*"

The Herr Oberst staggered to Kraut headquarters and fell into his chair. Three other Teutons gathered around him and asked if it was the *Uber-Offizier's* heart or liver that was acting up. Then a Heinie with a monocle peered at the Yankee print on the bit of newspaper and his eye window popped loose.

"*Ach! Loock yunee! INDIANS SCALP BREWERS! Take Lead—*"

"*Was ist? Donner und Blitzen der Brewers in Amerika Chermans ist always. Der Indians take der scalps mit—Himmel! Der lead to shoold in guns—dey take. Dat means der Indians haff—Gott! If—*"

Into the presence of the Teuton tacticianing tycoons shuffled an undersized Boche dough. His shaking lunchhook held the aforementioned strange hatchet, and he extended it to a big Herr Oberst without remembering to salute. The Heinie officer took the war

American military moguls were miserable! For along the Western Front, the Krauts were doing a Russian business which threatened to give the Potsdam Potentate a corner on the Frog real estate market. But meanwhile there was one thing that neither Chaumont nor the Wilhelmstrasse had figured on. This was Phineas Pinkham's skin game—a redskin game that was a cinch to corner a flock of squarehead scalps!

hatchet and looked at a name that had been carved into the handle. It was "CHIEF SPOTTED ELK." And there were dark stains on the business end of the sinister weapon.

Herr Oberst von Hamhockz wiped globules of worry dew off his beefy face and got up. Breathing heavily, he waddled out to a Jerry staff car and told the flunkie at the wheel to get him to the nearest town where there was a drug store. He might even want to be driven to Sweden, he muttered as he wedged his big carcass through the door of the gas buggy.

OVER on the drome of the Ninth Pursuit Squadron, there was quite a to-do. Lieutenant Phineas Pinkham brought his ailing Spad down just in time to see a Frog peasant being dragged by a sentry toward the farmhouse where the Operations Office was sheltered. Phineas quickly hopped back into the pit and tried to take off again, but the Hisso had folded up for the day. "Oh well, I'll make 'em prove it!" the flyer sniffed, and he again climbed out of the Spad's office. "Let 'em get a lawyer."

He limped over to his hut, paused in the doorway for an instant to watch the Frog go into Squadron Headquarters, then said disgustedly: "Them Frog bums are always makin' a fuss over nothin'. Well, I will wait, and it won't be long."

Phineas was right. It wasn't.

An orderly appeared on the threshold of his cubicle within five minutes and told the joker that Major Garrity was desirous of having an immediate interview with him.

"Awright," Phineas chirped. "Tell him to keep his camisole on. I must first get tidied up. Haw-w-w-w-w!" He began to whistle.

LIEUTENANT PINKHAM had never seen a more excited Frenchman in his life than the one on deck in the Operations Office. The Frog hick was hopping up and down and waving his arms like a windmill, meanwhile hurling a verbal barrage at the Major that had the Old Man's ears vibrating.

"Mais oui! Ze pceeg, he have steal eet ze hair from ze mane of ze *cheral*. He have cut eet off ze ends from ze tails of ze *vaches*. *Sacre Bleu—Mon Dieu!* He steal eet ze blankets of ze *chevaux*! I geet ze gun an' geeve to ze robbair ze shots from bucks. *Tres bien*—I heet thees robbair an' he mak' ze holler. I weel see President Poincare an' Marshal Foch. General Persheeng I weel sec, *aus-si Joffre*—"

"You forgot Napoleon," Phineas helped out. "Well,

Lafayette, I am here and whatever I am blamed for is a lie. I have been limpin' ever since last night because I was hit with shrapnel yesterday, and—"

"Pipe down!" roared the Old Man. "You were out last night. The only buzzard off this drome. You might as well own up, Pinkham. You can be shot for stealing—maybe you can get hung. You."

"Did they bring the electric chair over here with the doughs, too?" Phineas yelped. "Awright, if I did it, prove it!"

"You peel off those pants and let us look at your shrapnel wounds, Pinkham!" Garrity issued a roaring order.

Phineas covered his freckled face with his large hands. "Major," he bleated, "shame on you. How could you? Why you—aw-w-w-w!"

The C. O. growled like a hound with the rabies. Captain Howell edged close so that he could prevent the Old Man from pulling a gun.

"Bah-h-h-h-h!" screeched the Frenchman. "*Ze argent ccs zat wheech I want. Fifty francs for ze blankets an' a hun-red francs for ze hair from ze *cheral*. I go to Poincaire—to Paree—*"

"Make it Siberia," Phineas suggested, "an' I'll pay half the ticket. You can't threaten me, you snail killer. I demand a fair trial, as I know my rights! And I will not disrobe in front of everybody without a court order. It is indecent exposure, an'—"

"*Mon Dieu!*" the wild-cyed peasant yipped. "*Ici I come for ze satecsfacion—an' what ccs thees I have got, non?*"

"You get out of here!" The Old Man suddenly belowered. "Or I'll shoot you for a spy. They stole hair off a horse, huh? Is that such a crime, you little gazebo? You still have the sheevals, haven't you? You've still got the vashes to milk. Get out of here or I'll kick you clear to the Channel!"

"Haw-w-w-w-w!" Phineas gurgled. "I'm beginnin' to like you, Major. Now you are usin' some sense. That Frog—"

"And as for you—you get out of here, too, Pinkham, or by cr-r-r-ipes I'll put a half hitch in your neck! If I find out—"

"I weel see Foch—ze President of France!" the Frenchman fumed as he was hustled out. "*Aussi ze robbair try to steal ze poulets. Ze chickens—*"

"I wonder what that Frog will say when he sees he has no paint left in his barn," Phineas muttered to himself as he tramped out ahead of the blast from the Major. And the Major, meanwhile, continued to roar.

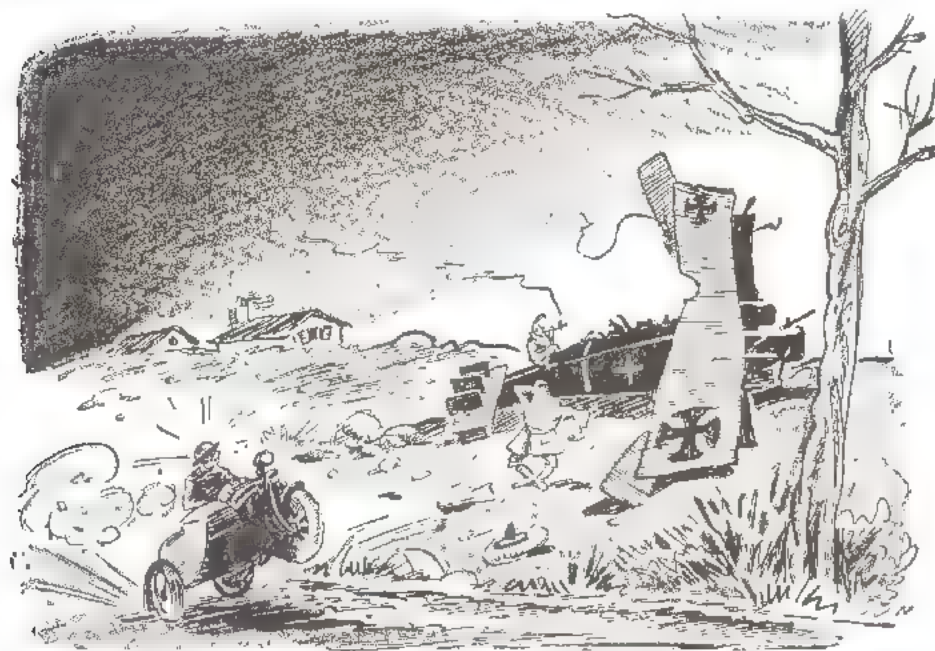
BRASS HATS rolled into the Ninth Pursuit an hour later. They came to relay news from Chaumont that the Air Force had to find out for sure if Russian troops were being brought up to support the Hindenburg line.

Now "A" Flight was having a respite and "B" and "C" outfits were taking pokes at the Vons for the nonce. Accordingly, Phineas Pinkham was within carshot near the window of Garrity's office while the brass hats' oral barrage was being fired.

"We've got to be sure," one of the officers, a Colonel, said to the Old Man. "If that Russian army has decided to throw in with the Kaiser, we've got to call for a million or two more men back in the States. Planes can find out whether they have. I think the Russians are gathering back of the front, and when they get strong enough—"

"That's easy," Phineas piped up. "Once the wind blows right, you will find out. The bums nev-

(Continued on page 74)



He found a Henie walking in circles and Chief Spotted Elk calmly smoking a Calumet pipe.

Snapshots of the War



One of the first American to see service in the air was the old Bill 2 (Lorraine) biplane. That helped



so it was one of the first to see constant action. Experimental, second type, C series. Here is a four-bladed prop. For a time, these ships were actually used as fighters and as this one may appear. Note the four-bladed prop. (Official Canadian War Photo)



And here's another SC model—and this time it's the little known Nieuport SC two-seater (Maybe we'd better write that 2-C-ler!). You'll recognize in this ship many of the characteristics of the Nieuport single-seat jobs, with similar fuselage and strut arrangement. Observe those guns—especially that top-wing weapon which the gunner apparently handled from a standing position. (Pugliese photo.)



Britain's first popular sky hero, George L. Hawker, V.C., is shown here as he appeared not long before he was "creased" by von Richthofen and hurled to the airman's Valhalla. That particular fight lasted nearly an hour!



Known as "The Duck," this smiling German flyer was an expert swordsman, and he "fenced and parried" even in his aerial encounters. His real name was Bruno Leersner, and he was credited with 44 victories. (Pugliese photo.)



You've often heard of Edward Ritter von Schleich, the "Black Knight of Germany." And now here's a chance to catch a glimpse of him up there in the pilot's pit of this Roland "Walrus" two-seater. Translated into English, the name of this ship means "whale," and you'll note how some way—maybe the Black Knight himself—had painted the craft with eye and gaping mouth to make it resemble its aquatic namesake. (Pugliese photo.)

"Landing Fever"

By George Lyle

Transport Pilot and Flying Instructor

PARENTAL DISAPPROVAL

IN the middle of the week following the Sunday Chet Macklin had deliberately cracked up with his student, Jack Conroy, to avoid crashing into another plane, the instructor was logging his time for the day when a well-dressed man appeared in the office doorway. "I'm looking for a pilot named Macklin," the gentleman announced.

"Guilty," admitted the instructor arising.

"I'm Jack's father. You know Jack Conroy's."

A slow smile spread over the pilot's tanned features as he studied his visitor's face. He extended his hand. "I was just wondering where we had met before. Now I see it's merely the resemblance between you and Jack. . . Won't you sit down, Mr. Conroy?"

Both men lit cigarettes. And then the elder Conroy came directly to the object of his visit.

"I'm thinking of putting a stop to Jack's flying," he declared.

"Why?" asked Macklin quietly.

From his pocket, Jack's father took a folded piece of newspaper. He opened it out, shoved it across the table to the instructor.

The pilot scarcely glanced at it. "I know," he said. "Some amateur camera hound got a shot of our crack up, then sold it to the papers. Yes, I saw it."

"Well, you can imagine the effect it had on Mrs. Conroy and myself. Jack is our only boy. I—we can't let him go on with it."

Macklin carefully refolded the clipping and returned it to the frowning father. "Are you also going to stop him from doing any more driving in the family automobile?"

"There's no comparison there," contended Mr. Conroy.

The pilot shrugged. "In the same paper in which this appeared a picture was published of a demolished car—side-swiped by a truck and hurtled over an embankment. Three persons were killed outright and two were critically injured. . . Would you, Mr. Conroy, have preferred Jack to have been in that car rather than in our little crack-up?"

The other man gestured impatiently. "But that's different!"

"Why?" queried Macklin with mild but unescapable insistence. "Why?"

"Because—" The student's father hesitated a moment. "Well,—because I feel an accident is far more likely to happen in flying than in driving."

"But that's where you're wrong, Mr. Conroy. If you eliminate military, test, exhibition, and racing flying, statistics on the basis of miles travelled prove—"

"I know. . . I know," protested the father. "Good heavens! Jack harped on that very thing for a year before I gave my consent to his flying in the first place. Why, for awhile I almost believed it myself. I wanted to, you understand? But now after seeing the picture of that wrecked plane and reading things about my son's 'miraculous escape from death'—"

"That's hokey!" interrupted the pilot. "I noticed that line in the news story, too—and that's the sort of stuff that gives me a pain."

"You mean," said Mr. Conroy incredulously, "that you don't consider Jack and yourself *fortunate* in getting out of that smash-up alive?"

"Heck no! Why, I got a split lip out of it and Jack a nasty bump on the head—whereas with any sort of luck we'd have walked away unscratched! Anytime you can take the impact on the wing the way we did, the risk of injury isn't as great as when a guy hits the line in a football game. Believe me, sir, I know what I'm talking about. I've seen plenty of deliberate crack-ups—in fact, I pulled a few myself in motion picture work—and I'm telling you Jack and I were playing in rotten luck to get bunged up at all."

"Do you honestly believe that, Macklin?"

"I *know* it! And speaking of luck, here's another angle: I've been flying for more than fifteen years specializing for the last ten in dual instruction and that crack-up is not only the *worst* one I've ever been in but also the *only* one I've ever had with a student. . . Now, considering the thousands of student flights I've made, don't you think it was a miserable stroke of luck for Jack to have been in the lone, solitary crack-up of my instruction-flying career?"

"Well. . ." Jack's father rubbed his chin. "You almost make it sound like all my fuss is sort of a tempest in a teapot."

The veteran pilot grinned. "A most accurate description." Then his face straightened. "But it does have one serious aspect."

"What's that?"

"The effect it's going to have on Jack," came back the instructor.

"How do you mean?"

"Well, the kid's quite imaginative—highly strung. It won't do his morale a bit of good."

The elder Conroy grew tense and his face paled. "My son's no quitter!" he snapped.

"No, I don't think he is," agreed Macklin, then he added slowly: "But if I had a son in

a similar situation, I'd give him a chance to prove that to himself. I wouldn't like to leave any cancerous spot of doubt in his own mind by *forcing* him to quit under fire."

Mr. Conroy arose angrily, "I've noticed that people who have no sons invariably know just how one should be handled."

Macklin met the other man's eyes without rancor. "I *had* a son, Mr. Conroy," he replied in a low voice. "He was just eleven when, three years ago, he and his mother were killed in an automobile accident."

The elder Conroy caught his lip. Embarrassment was manifest in the sudden flush that spread over his face. "I—I'm sorry. I didn't know," he said. Then he picked up his hat and started for the door.

But at the threshold he paused and turned. "Mr. Macklin, if I mean when Jack comes out for his next lesson I'd appreciate it if you wouldn't mention this little talk we've had."

"Of course not," the pilot assured him. Then he went on: "You know, I think it might be a good idea if you came out with him and let him 'introduce us.'"

JITTERY

ON the following Sunday, Macklin gravely accepted the introduction but coughed abruptly when Jack, after saying, "Mac, this is my Dad," added, "I don't think he's feeling very well today. Can't dope it out—because after arguing against my flying for a year, this morning, out of a clear sky, he insisted on coming out

LEARN TO FLY WITH JACK CONROY—LESSON NO. 7

here with me. And of all things, he gave me a 'pep' talk on the way!"

"Well, that's fine!" broke out Macklin in a tone somewhat strained from coughing. "Because you may need a rooting section today. We're really going to start in on the old grind in earnest. . . And say, how do you like the looks of the new plane?" Then he indicated, with a jerk of his head, a clean-cut looking little job on the line.

"Gee, it sure looks keen, Mac. But—but it isn't exactly like the other one. Will it fly much differently?"

"You'll never notice it. There's very little difference in the flying of airplanes which are in the same weight classification and have anywhere near equal horsepower. They all have ailerons, flippers, and a rudder. And they all feel the same 'mushy' way when approaching a stall," he added.

"Well," said Jack uncertainly, "I hope it's all okay. You see, I—I'm still kind of nervous," he confessed.

Macklin smiled at him. "That's natural after the bang-up we had last week. Be something the matter with you if a wing-ding like that didn't make you a little bit jittery before your next few flights. But don't let it worry you. I'm going to keep you so busy you'll forget all about it. Come on, let's go!"

JACK made the take-off, but not without considerable help from Macklin. The student's nerves were not "up to snuff," and so his muscular control was not of the best.

"Easy, fellow. . . Easy on the climb and hold it," coached the instructor through the Gosport. "I'll tell you when to make your turn, and *don't* forget to level off before starting the turn!"

A minute later, he pointed down and slightly ahead. "See that barn? Well, make your first turn around it. In shooting landings, you know, we don't actually circle. We fly a rectangle with rounded corners. Climbing will be done *only* on the straightaways. Anyhow, when we reach an altitude of 800 feet, hold it until we're ready

to start our glide in. . . All right, level out now and make your first turn. No! No! Not so steep! . . . There, that's better. Hold it through 90 degrees and then resume your climb . . .

"Now do you see that paved road? It's about a half mile from the airport—parallels the runway. Make your second turn as soon as you cross that road. Then turn and fly along the far side of the road. Don't get directly over it though, because the plane will block your vision. Stay far enough to the side so that you can easily see the highway off your wing tip. Keep it in one position in relation to your plane and you'll be paralleling it okay.

"And don't forget to stop climbing when we get to 800. No use picking up a lot of excess altitude that'll just be a problem to lose later. . . Hey, watch that wing. Carry it level. If you can't watch the road without dipping a wing, ease off a bit farther from it.

"And keep an eye on that altimeter. I said 800 feet! That doesn't mean 750 or 850. I want every single hop around this field flown exactly the same. We're going to wear a groove in the air, and as long as we're shooting landings I don't want you to get out of it. Get me? . . . All right, and for Pete's sake try to fly in a straight line. A snake couldn't have followed our course for the last few minutes!"

LANDING LAPSE

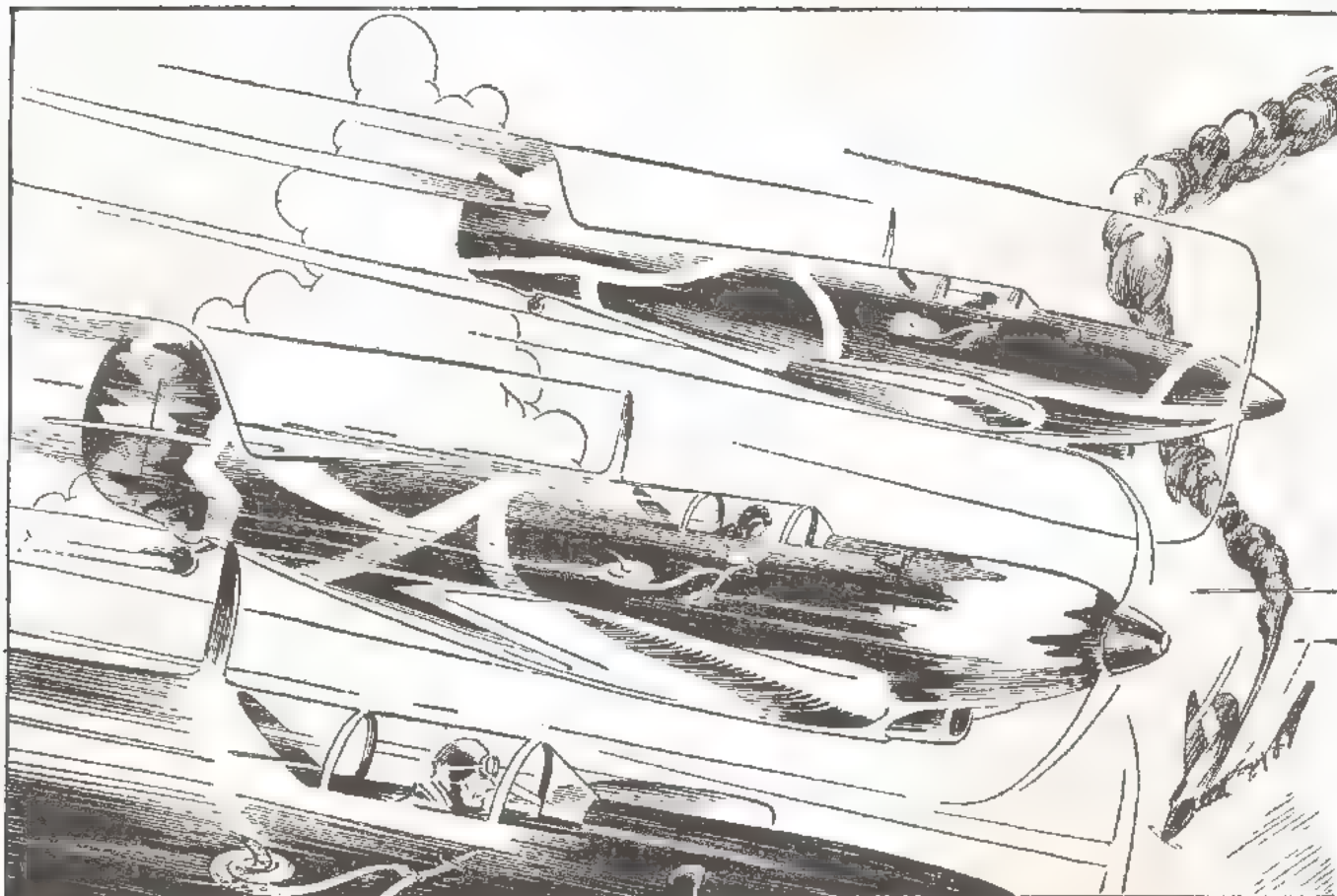
THUS Macklin "herded" Conroy around the field. His words, crisply enunciated, flowed almost without a break through the Gosport tube.

Of course, incessant mid-air talking to a student is more likely to be confusing than helpful, and no one knew it better than Chef Macklin. Normally he utilized the Gosport only for necessary corrections or to emphasize some fundamental point at the most impressive time. But now, with Jack Conroy, he had a definite purpose in keeping the Gosport "hot." He wanted to keep Jack's mind so occupied that it wouldn't for a moment revert

(Continued on page 64)



The elder Conroy grew tense and his face paled. "My son's no quitter!" he snapped.



Aces of Iraq

By Arch Whitehouse

Author of "Fog-Flyers' Fate," "Scourge of the Steel Eagles," etc.

Illustrated by Alden McWilliams

CRASH Carringer knew something was wrong the moment he stepped out of the heat-scorched Customs office at Bushire, on the Persian Coast. He stopped two steps outside, looked back through the doorway quizzically.

The man still sat at the desk in his musical-comedy uniform holding his Oriental pen between his first and second fingers, just as he had when he had scrawled his initials at the bottom of Carringer's Customs carnet. He seemed to be made of stone, except for those strange yellow eyes. They still focussed on the American airplane salesman and there was still that taunting half-smile at one corner of his mouth.

The last words the man had said were: "So you aire Mister Carrin n-ger, and you aire going on to Rutbah Wells . . . that is in Iraq? I wish you a ver-r-ry pleasant journey, Mister Carrin-n-n-ger. A ver-r-ry pleasant journey!"

Those words on paper seem innocent. In fact, uttered in a warm tone they would create a feeling of true sincerity. But the words had been spoken to Carringer with a sword-blade tonal quality. The man had made his "n's" in "Carringer" ring like a harsh bell one might expect as a signal opening the dread door leading to an

execution chamber or some ancient torture dungeon.

"Yes," Carringer had answered crisply. "I'm going through to Rutbah Wells—and I intend to get there! I came through the Yengah Nullah in spite of the fact that one Achmed Khan tried to block me. And now I'm going to Iraq and sell them Hale Hellions that will make those Breda jobs look like a flock of penguins with the pip."

He turned, strode across the cracked concrete apron to where his Hellion was standing.

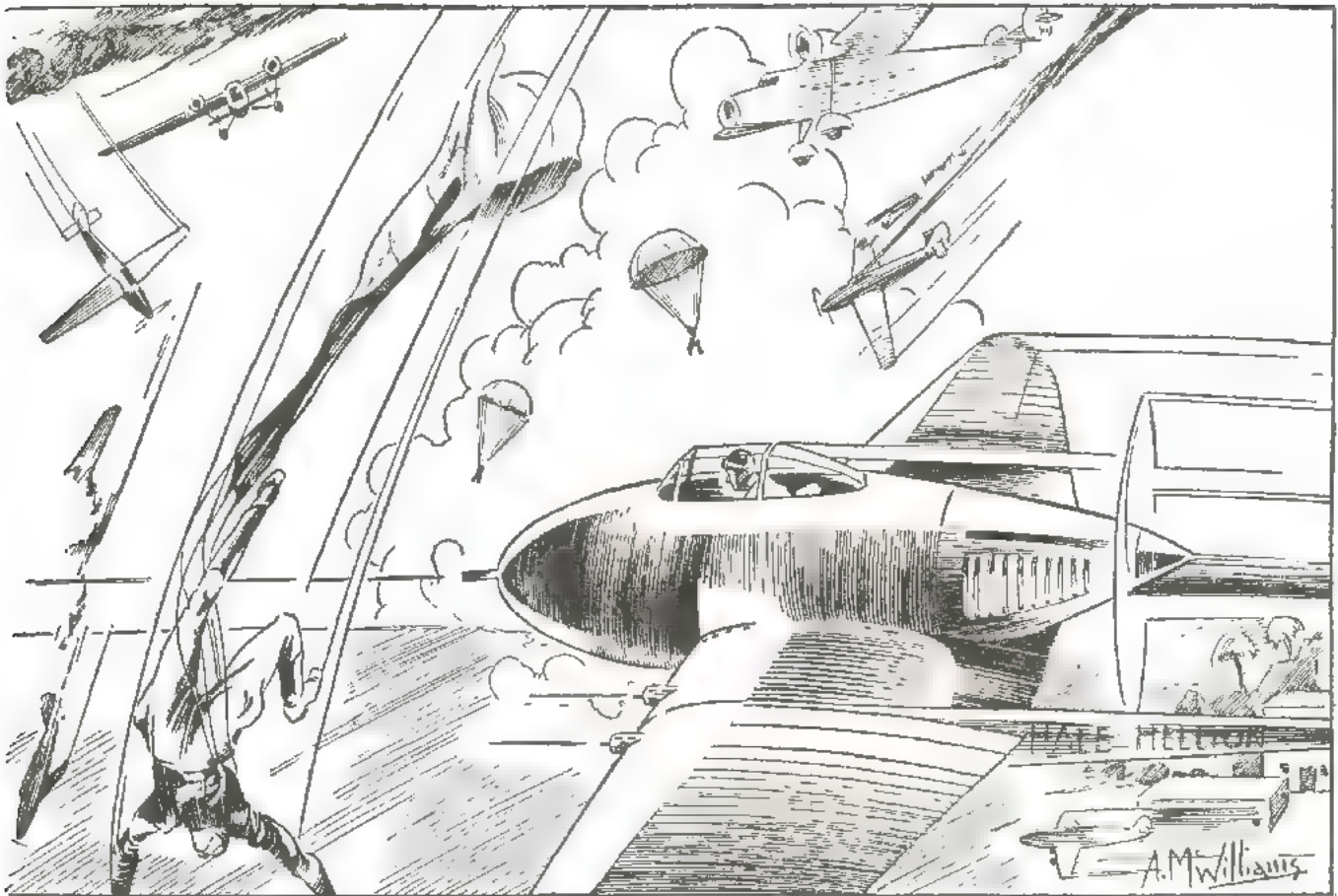
He'd said his piece, and had received no response. The Customs man still stared out at him with those glinting yellow eyes.

Crash hunched his shoulders, walked on to where the two Persian mechanics sat hunched on their heels beneath the Hellion wing. One of the mechanics grunted, shoved a check sheet toward him. Crash looked over it, saw what had been done on his plane—fuel tanks filled, wings inspected, and control rods greased. These greaseballs, he mused, knew their stuff, evidently graduates of the new Persian Air Force which had been trained by a selected group of flyers from the Swedish Air Force. But somehow Crash resented them, was untrusting.

While he went over the work, neither of the mechanics moved. They watched him, slit-eyed and silently immobile, as he assured himself that everything was right.

"You guys do a good job," Crash reluctantly admitted, as he took out his wallet and selected the money required. "And here's an extra bit of cash. Get yourselves a couple of facial massages and see if you can get a new expression on those dials of yours."

CRASH CARRINGER BATTLES IN DESERT SKIES!



Crash Carringer gasped. Across his vision, directly between his hurthing Hale Hellion and the onrushing Messerschmitts of the Yataghan, plummeted a toppling, twisting body—the wretched figure of a man hopelessly entangled in the shrouds of a parachute!

There was still no response. The wad of notes fell between the knees of one, who after a calculating glance dropped a long, lank hand over it. His fingers drew it up into a shapeless ball, along with the signed check sheet.

"Okay! Scram!" snapped Crash. "I'm on my way. How many miles is it to Basra? I'm going through to Rutbah Wells."

There was still no reply, no effort to offer any form of information, and Crash knew now that something was surely wrong. He knew that some mysterious, veiled force opposed his flight into Iraq. Perhaps a plan was already being hatched to block his way.

BUT SOMETHING had always cropped up to oppose his selling of Hale Hellion fighters. Something had cropped up in the Pacific, in China on his wild flight out of Nanking, and recently at the Yengah Nullah where the forces of Achmed Khan had blocked him, only to open a way for him to sell the British Royal Air Force a large order of these new American fighters. And now, with his eye on the air expansion scheme of the Iraq Government, Crash was once more on his way.

But again something was being done to stop him from getting through to Rutbah Wells, the Iraq aerodrome which lay 300 miles from anywhere in the heart of the Syrian desert. He tried to dope it all out. It was only his keen sense of intuition that warned him. That native in the Customs hut and these two silent Sams under the wing had put him on guard—but against what? And for what reason?

"Oh, well. If they try anything in the air, I've got the best bus in the world and plenty of socko to slap at them. If they've 'fixed' this boiler, I've always got my silk. And I'll still be able to walk, I hope."

Crash climbed in and kicked the starter. The big 1,000 h.p. Allison motor opened with a generous roar, and he throttled her back for a warm up. The two mechanics scampered away out of the dust, grinning back at him over their naked shoulders.

"Go ahead, laugh," snarled Crash. "I'll laugh when I get to Rutbah Wells."

He watched the engine temperature dials, glanced up at the wind sock over the dull stone sheds. It was hanging limp, so he simply released the wheel brakes, gave her the gun, and rumbled away. Crash held her steady with that fine hand of his, and let her fly herself off in a long easy lift. He circled once over the aerodrome, then shot away to the northwest and followed the coastline up the Persian Gulf toward Basra, which lay a little more than an hour's flight away.

Finally he set his prop and switched her over to "George," the robot pilot. So far on his journey, things had gone fairly well. They had, at least, until he ran into the yellow-eyed devil at Bushire. True, there had been no Customs trouble, but it was the manner of the man that bothered the American. Crash reflected for the seventh time on the man's evil tone and manner. It had a stench of treachery, but there was nothing he could really put his finger on.

He stared again at the map which he had slipped into the R.A.F. case he'd strapped to two cable conduits running

Crash Carringer, sky-fighting "Hellion" salesman, was resolute. "I'm going through to Rutbah Wells!" he clipped defiantly at the shifty Bushire Customs agent. But Crash didn't know that he was about to face a horrible, paralyzing death against which his heavy "Hellion" armament would be utterly useless. Nor did he know that while he shuddered there helplessly, a murderer's bullet—a bullet strangely powered with the flame of life—would be blasted at his back.

along the right side of his cockpit. His route passed along the coast, crossed open water for about one hundred miles, then entered the south-eastern tip of Iraq and followed the Tigris River to Baghdad.

He finally shook himself out of his weary reflections and studied the terrain below. It was strange country, a mixture of lush tropical vegetation and gaunt desert. The blue green waters of the Persian Gulf bore a few surface vessels, an odd tramp steamer or two and a few gay-sailed broad beamed boats that might have been built in the days of Carthage. There was also a gray cruiser of indeterminate nationality and a lumbering freighter trailing a long plume of smoke that seemed to be broken up into uneven lengths of black blobs.

It was the smoke from that freighter that caught Carringer's attention. He had never seen smoke pour from a freighter's funnel like that, and his keen mind at once sensed that the smoke was being used as a signal of some kind.

"HELLO. What's the idea?" he snapped to himself, checking the dots and dashes of the smoke. "That's a new idea!"

He pondered on it, then realized that for one to be sure of seeing and reading it correctly, one would have to be above or to one side of the vessel.

He waited, looking around above him. But the sun was particularly bright and he could not cover the whole area at once. Now he sensed his shoulder muscles tightening, and he looked back toward his instrument board and gasped!

The *thing* before him held him spellbound. He quickly drew up his feet, thankful that "George" still had control over the plane. He watched horrified, remembering he only wore light brogues, British cashmere golf stockings, a pair of gabardine shorts, a singlet, and a light sports shirt—no gloves, no heavy boots, no protecting coverall.

The *thing* twisted, coiled just between the rudder pedals. Its head had a majestic air of command as it slowly turned from left to right and surveyed the situation. Strange lights glistened off its neck, and its beady eyes were alive with glints of crimson, emerald, and jade.

It twisted again, recoiled, and jerked. Crash slammed himself against the opposite side of the narrow cockpit. He fumbled for a knife, a hammer, a wrench—anything to ward off this deliverer of coiled Death.

The Syrian viper darted away to wind itself among the insulated cables and conduits that lined the right side of the cockpit. And Crash could now see part of the bull-whip tail swishing back and forth under the map case.

"Good Lord! How did that get in here?" he gasped, wondering whether to strike with his foot and hope to hold it until he could get the plane down. "That thing must have been placed in here."

The enigmatic smile of the Customs man at Rushire now came back to him again, and he cursed under his breath. No wonder that devil had said: "I wish you a very pleasant journey, Mistaire Carrin-n-ger!"

"What a dirty, lousy trick," snorted Crash, drawing his feet farther up. He sensed that if he trod on that part of the tail he could see there was still enough left to turn and sink its fangs into him. Carringer understood enough about these snakes to know that one slight break of the skin would be enough to finish him. That would mean a writhing, screaming death that would let him remain conscious just long enough to watch himself crash at 300 m.p.h. into the desert waste below. His muscles would be paralyzed, his fingers would stiffen. The lethal poison would surge through his system in a few minutes, in a much shorter time than he would need

to get down and—but what was there to get down for? He'd only die in the desert, wrenched with pain, helpless, unable to move a poison-bloated limb. To lie there grovelling in the sand with a mad, dancing film of departing consciousness flashing across the screen of his tortured mind!

He almost went mad as he realized his plight. No gun, no knife, not even a nail file. He laughed grimly, then opened the cockpit hatch to get some air. He was covered in perspiration, as he let "George" carry on.

Now he climbed up higher in his seat and put his elbows outside the cockpit, wondering whether he dared climb out on the wing—wondering what he could do if he did.

He could not see the snake now. It had gone behind his seat. But the vibration of its movements, its interlacing in and out among the conduits could be sensed by the fear-drenched Carringer.

Now it came out again, drew its head back as if set for a strike. Crash watched it, his eyes streaming in the slipstream, for he was wearing no goggles or helmet. The *thing* was hauntingly slow in its movements, but certain as Death in its deliberation.

Crash came down a trifle, tried again to figure a way out. The Hellion meanwhile continued its prescribed course, true as steel. But Crash wondered how long it would fly after he was struck.

The *thing* hissed drew back and Crash kicked out at it. It struck out, and Crash felt a sickening, dull thud on the bottom of his shoe.

It recoiled, hissing again. This time, Carringer knew it had no intention of missing. It feinted once, twice, then drew back again. Crash shot his foot out, but the viper drew off, let the thrust pass. Crash could see its eyes flickering the strange lights again. Surely he was doomed.

It drew back again, tauntingly, and Crash could see one eyelid draw down as if the devilish thing were taking aim at his middle. He drew his stomach in, and his belt slipped down. He struck out again—only to watch the coiled killer dodge, hiss, then poise to strike once more.

Crash figured nothing short of a miracle could save him now. He pulled up, his eyes wide with horror and frenzy, and awaited the finish. The viper's neck drew tense.

Crash wanted to close his eyes, but the fascination of the thing held him spellbound. The deadly devil seemed to know it had outwitted its prey. This next blow of its fangs would be final. It poised and—

Crack! Something had struck the Hellion!

Crash had no idea what had happened. All he saw was the head of the viper disappear. The scarlet-tipped writhing thing had fallen back between the rudder pedals.

FOR SEVERAL SECONDS Carringer could only stare down into the cockpit. He was utterly exhausted, unnerved. The snake had been mysteriously decapitated before his very eyes!

He dropped back into his seat, gasped for breath. Then another crash roused him out of his semi-stupor.

Crack! Cr-r-rack!

He kicked at the writhing mass at his feet. Then it all came to him! A glance upward explained what had saved his life. A gleaming Messerschmitt fighter was slamming down at him from an acute angle!

He watched it, fascinated with a new degree of excitement. This was something he could fight—something he could handle in a man's way!

He jerked the lever which released "George" from his duties and took over. The writhing, tangled coil at his feet meant nothing now.

The Hellion came over with a scream, and Crash pressed top rudder and shot her up in a climbing turn that left the German fighter apparently standing still. Crash brought her around, avoided a wild burst that scattered smoking tracers all over the sky, and climbed again. The Messerschmitt tried to turn inside and under him, but Crash was in full control now.

The next few minutes saw an amazing picture of
(Continued on page 65)



If Japan Bombs Vladivostok

THE DRAMATIC STORY BEHIND OUR COVER PAINTING

WHILE the eyes of the rest of the world are focussed on the continued crises which bid fair to boil Europe into an infernal cauldron of international strife, few have given thought to the fact actual warfare has frequently broken out between the armies of Soviet Russia and Japan in Eastern Asia.

Some weeks ago, an undeclared Russo-Jap war raged along the border of Manchuria. Troops fired on each other, big guns hammered, tanks rumbled into action, and fighting planes met in those Asian skies and exchanged bursts of machine gun fire.

The "war" continued on unabated for more than a week—until Japan, taking inventory of her position in China, hastily called a truce. They left the Russians retaining their grip on a small village that figured in the fighting.

As far as the general news was concerned, this ended the latest "undeclared war". The newspapers turned their attention back to China, Spain, and Czechoslovakia.

But slant-eyed brown men still eye gruff Cossacks across the border; and Japan, realizing that she had "lost face" in the northern campaign, has undoubtedly decided that she should do something to nip in the bud this newest threat to her bid for Asiatic supremacy.

While it is obvious that Japan has all she can take care of in China, international experts declare that she hopes conditions in Europe will give her a real opportunity to take revenge for the recent border fiasco. The Nipponese, they say, would like to see the Czechoslovak crisis bring Russia in against Germany—thus distracting the Soviets from the Oriental front.

But on the other hand, the Russian Bear has been waiting more than thirty years for a chance to wipe out the defeat suffered at the hands of the Japanese in 1904. And now that Japan appears to be bogged down in China, the Reds naturally see a splendid opportunity to win back their former power in Eastern Asia.

Russia especially objects to the prospect of having Japan plant a million Japanese families in Manchukuo, as is now scheduled. That would place a dangerous number of Japanese in a position that would tend to cut Vladivostok off from the western terminals of the Trans-Siberian railroad—the main artery between Moscow and the East.

Glance at a map of Asia and note how the northern tip of Manchuria noses deeply into eastern Siberia. It offers jumping-off places for dozens of raids on the Trans-Siberian railroad, and Japan is in the right spot to conduct them—if she dares to make the move.

Admittedly, Japan may quickly make that move—if the situation in Europe breaks her way. Thus, if she realizes that her campaign in China is not satisfying the

people, she may decide on such a bold step in the north. Conditions in China might even compel her to withdraw for a few months, or at least dig in for a time. And so it is perfectly reasonable to assume—knowing the Japanese point of view—that she may distract attention from her China "let-down" to fight on this new stage closer to her northern position.

Vladivostok, Russia's main eastern terminal of the Trans-Siberian railroad, is only 475 miles from the Japanese mainland and only 100 miles from Rashin on the northern tip of Japanese-owned Korea. Assaults of various kinds could be made on Vladivostok from the decks of aircraft carriers steaming through that narrow portion of the Sea of Japan. Bombers could take off from Korea and within forty minutes could rain down tons of explosive on the city. Indeed troopships might maneuver out of the fog of the north, land soldiers just outside of Vladivostok, and perhaps capture the city in a surprise move and hold it for some time.

Such a blow as the last named would go far in erasing Nippon's disappointments of the China campaign. And

possibly Japan would not have to bear the brunt of the burden alone. One Dictator in Europe would gladly assist with the donation of several bombers, big guns, and the like, to help assure success. Yes, we mean Hitler. And it would be worth it to him to keep the Russian Bear occupied while the Nazi war machine handled matters in Middle Europe.

"RUSSIA MARCHES AGAINST GERMANY!"

That, say the experts, is the headline the Nipponese militarists hope to read. For not only would it herald an easing of the tension on the Eastern Frontier, but it would likewise signalize the hour which Japan has long awaited—the "zero hour" in which to strike at the Red's strategic seaport city on the shore of the Golden Horn.



IT is, then, no purely imaginative scene that our artist, Mr. Schomburg, depicts on this month's cover of FLYING ACES. Instead, it's a scene which promises to become reality, should Europe be gripped by a new war—for it would be the soundest scheme Japan could engineer, both to consolidate her holdings in the East and retain the good will of her Euro-

pean ally, newly-powerful Germany.

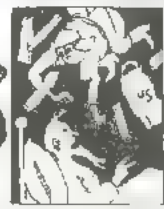
This Russian port on the shore of what is known as the Golden Horn, is of decided importance. It boasts a harbor four miles long and a mile broad kept open all winter by ice-breakers. Thus, it is strategic as a naval and commercial station. There are two dry docks, one floating dock, and storage capacity for more than 500,000 tons of produce, the cargo turnover every year running between two and three million tons. Nor can Vladivostok's value as a colonization base be ignored.

Should Japan attack Soviet Russia, there is no question but that she would first attempt to take or destroy Vladivostok. Here she would be in command of an important transportation terminal. What's more, the harbor could shelter her navy and transport ships, and she would thus gain a strong foothold on the mainland from

(Continued on page 73)



WISECRACK-UPS



Taxi in on this runway and pick up a plane load of laughs! In this department, we present a collection of jokes, cartoons, and humorous verse. For all original contributions which we can use here, FLYING ACES will pay \$1. Contributions cannot be returned. Address all letters to WISECRACK-UPS.

SAFETY FIRST

Pilot (worried): Careful! Careful! One single move and this crate'll collapse!

Passenger: Y-y-yes—but can't I move my chewing gum over to the other side of my mouth?

Pilot: Heavens, no! Center it!

BAD MANNERS

Kiwi: Say, Buddy, can you tell me the name of that Italian plane over there?

Sky fan: Cant.

Kiwi: Well, at least you might answer politely.

IN 2038

His face beaming, the professor climbed into the pit of his sleek new sky craft.

"At last I have finished my new rocket ship!" he said, addressing a nearby spectator. "I'll now make a 'round-the-world test hop—and I'll travel faster than any man has ever dreamed of traveling!"

The bystander listened with a bored air. Then, after a pause in which he swung around to bum a cigaret from a friend, he turned back to the rocket savant and said, "Well, why don't you start?"

At this query, the professor looked at him blankly. "Start?" he said. "Why I've just *been!*"



"—Be seern' ya soon, pa!"

GLAD TO HAVE HIM

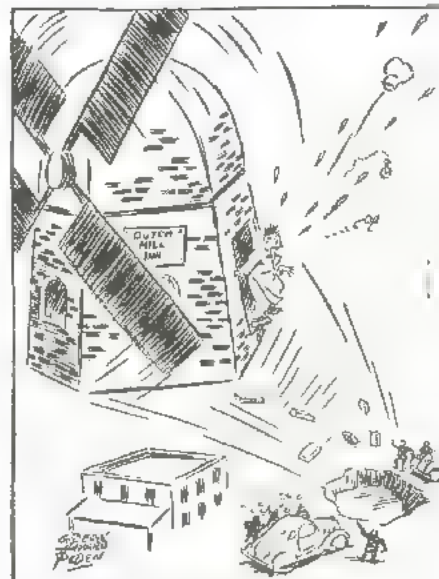
New pilot: I'm awfully sorry to hear that your Flight Leader got killed. Do you suppose I could take his place?

Squadron Commander (testily): That's an excellent idea. Go see if you can arrange it with the undertaker!

RISKY

Airport manager: But why don't you want to go up in this autogiro?

Florist: To be frank, I'm afraid its petals might wilt.



"Mr. head-on! I got too many ribs on her!"

BAD MEMORY

Father: I've got a surprise for you, Johnnie. Today I'm going to take you for your first ride in the air!

Little Johnnie: First, nothin'! I been up before.

Father (confused): Why, I'm sure you haven't, son.

Johnnie: Gosh, pop, d'ya mean to say you've forgot how the stork brung me?

ANOTHER WORRY

Scared airline passenger: The weather's getting worse. Good lord, we'll go to our doom!

Fatalist friend: Aw, why worry? Destiny isn't ready to call your number.

Scared passenger: Maybe not. But what if She calls the pilot's number?

"Flying that Seeing Eye dog east in the airplane was the pilot's idea. I'll bet," says Dick Jackson, of Empire. Ore "You see," cracks Dick, "the pilot probably wanted him along in case of bad weather in which he'd have to fly 'blind'."

NO ARGUMENT

D. of C. Inspector (roaring mad): I tell you that any mug who flies as bad as you do shouldn't have a license!

Crack-pot flyer: That's okay, then. I haven't got one.



"Quite simply explained, my friends. You see, they're flying south, while we're flying east"

Through the Aero Lens



Crack-up, huh? But that's not what happened here at all! Instead, this picture shows the Navy's new Douglas TBD-1 with its wings all tucked in nice-like for stowage in its battle-steel nest aboard ship. This folding wing monoplane is the first of its type to be accepted by Uncle Sam's admirals. Its routine job is to tote a half-ton torpedo for attacks on enemy surface vessels.



'Blow, winds, blow' Only this time it's a man-made blower that supplies the wind. Actually, what we're looking at here is the compactly-rasped rotary blower fitted on the cowling of an Army PB2-A. Its use, of course, is to 'soup up' the Curtiss Conquest engine with the extra air the power plant needs for more efficient operation at high altitudes.



Ever stick your head over the side of an Army O-46A Douglas observation ship? This is what you'd see if you did. Well, grant them, aren't so many instruments here as there are, say, in the office of a MC-4—but who wants to watch a hundred-odd instruments when there's enemy gunners to keep your eyes on? The O-46A, you know, is one of our first-line Army ships.



Here's one for you modeling lads who've been writing in for more close-up details on the "Flying Fortresses" the Army's Boeing B-17's. This shot shows the nose of ship all skinned up for a Saturday morning inspection. From it, you can get a good idea of the nose turret construction.



This strange contrivance is not a meteorological balloon but a striking head on shot of the nose turret and bomb-sight window of the new Douglas B-17 bomber. Quite a working office, huh? And that's a .36 caliber Browning machine gun pointing menacingly out of the lower part of that slot—something our sky enemies of tomorrow will do well to keep clear of.

Boy, it seems as though our Air Corps paint daubers are well on their way toward making lances almost invisible! Anyhow, this is how a beautiful "Flying Fortress" can be made to look like nothing at all by spreading on brown, green, and white splashes in the right places. They tried the idea out on this big bomber for the Northwestern States war games last summer, and this camouflaging business may become a permanent feature. And will this mean that the planes in the next war will fly without insignia?

All Questions Answered

This section of **FLYING ACES** is at your service. So if you have an aero query, fire away and we'll answer it here. All questions will be considered in the order they are received. For a personal reply, send stamped, self-addressed envelope.

□ □ □

Bob Quick, West Camp, New York:—Yes, you can buy the Grumman G-21 as a personal plane—if you have the price. But of course you cannot fly it equipped with guns or military equipment of that sort. I have no idea of the actual cost of such a ship, for you would have to place an order stipulating the equipment required and the engine used. For this reason, set prices on any such planes are seldom quoted.

Fred Baker, Atlanta, Ga.:—I suggest that you get in touch with Bannerman's Curio Shop, 501 Broadway, New York City, for purchases of military souvenirs and curio bullets. For fifty cents they will send you a very complete catalog of their stock.

Joseph McGuirl, Jersey City, N. J.:—A *really good* model maker—if he learns how to market his models—can make quite a little money. Many of the airlines for instance, are interested in models of their ships for advertising and exhibition purposes. The Army and Navy train men for duty with the Air Service or the Fleet, but not as aeronautical engineers. They can get all of those they want out of the better technical colleges.

Kenneth McDonald, Granby, Quebec:—To obtain an appointment to West Point you must be an American citizen. A few foreign students, recommended by their respective governments, are sometimes accepted as students for the four year term but only under a special exchange system. I do not know whether any Canadians have ever gone to the Point under this arrangement or not.

D. P. Connor, Wellington, New Zealand:—Will you get in touch with John Meyers, 2540 S. 10th. Street, Philadelphia, Pa.? He wishes to get your address.

Pat Blackledge, Laurel, Miss.:—Yours is probably the most startling question of 1938! You want to know where you can get balsa seeds so you can "grow your own." And that's a swell idea, too. But unfortunately the balsa tree is a tropical plant, and I have no idea where it would grow in the U.S. Fact is, I don't think it would. Your idea *does* excite the imagination, though. Why couldn't a person get seeds of the common, garden variety of *plane* tree, graft 'em onto balsa seeds and grow a plant that would blossom out with models ready to fly. And maybe by paint. ing the grafted seeds the regulation U.S. Service colors Anyhow, the

scheme has great possibilities—or are we carrying this thing too far? As for the Waco Model-D, that's a two-place, high-performance military biplane using the 420-h.p. Whirlwind. It comes in several types, mounts four light machine guns, and can be flown as a light bomber. Its span is 32½ ft.; length 25 ft.; and height 9 ft.

William R. De Tarnble, Chicago:—The details of the folding wings on the Blackburn Skua are apparently on the secret list at yet. None of the reports we have on the ship carry any details on the mechanism. I suggest that you write to the National Aeronautical Association, Washington, D.C., and ask for their booklets on folding wings. I am sure you can get much information in that way.

Robert Marsh, Chicago:—Thanks for your kind letter on Kerry Keen and Crash Carringer, but aren't you a little harsh on poor Beansie Bishop? He's

was built by the Royal Aircraft Factory. The address of the Koolhoven company is Koolhoven Vliegtuigen, Rotterdam, Holland. The Dornier firm's main plant is Dornier Metallbauten, Friedrichshafen, Germany.

Robert Boyd, Dallas, Tex.:—Sorry, but I can't answer such a technical question as that. I suggest that you write Prof. Alexander Klemin of the New York University School of Aeronautics. That one is too far ahead for me.

Johnny Kissinger, New Castle, Pa.:—We have a few back numbers of certain issues of **FLYING ACES** available. Let us know which ones you desire, then we'll check back with you. Such copies are sold for twenty cents each.

Bill Eaton, St. Louis, Mo.:—Both the Army and the Navy have training schools for mechanics and riggers. The Coast Guard I believe has a special school at New London. An ordinary public school education is enough to get you into these services as an enlisted man.

Bob Service, Seattle, Wash.:—Your water color painting is particularly good—and I hope to add it to my personal collection, if I have your permission. You have a fine sense of action. The Hawker Fury is at present the fastest service squadron plane in the Royal Canadian Air Force, although they will soon be replaced by Canadian-made Grummans.

Robert Eberhart, Lake Worth, Fla.:—There is no reason why a plane could not be flown around the world at the equator, providing suitable refueling operations could be carried out. I believe there are plenty of aviation engines both here and abroad that are capable of running those 25,000 miles without burning out.

S. Kaczmariski, Astoria, L. I.:—I do not think your plan is feasible. You do not realize the extensive work and business arrangements involved in such an undertaking, and you certainly do not know the grim business of publishing today. The idea is good—from the purchaser's point of view—but it would be very hard to put over.

Fred Lewchik, New Britain, Conn.:—There appears to be no law that prevents any U.S. aircraft manufacturer from selling the manufacturing licenses on any plane at the present time. For that reason, then, Boeing could sell some

(Continued on page 62)

And Now We'll Ask You a Few

- 1 What famous war-time aviator had but one eye?
- 2 What two noted war-time airmen suffered from tuberculosis?
- 3 What is the difference between British and American machine gun calibers?
- 4 Who was E. T. Willows?
- 5 What is meant by "precipitation"?
- 6 Define the term "pre ignition".
- 7 What type plane did Howard Hughes use in his 'round-the-world' flight?
- 8 What is a spot landing?
- 9 How many rounds (bullets) were there in a war-time Lewis gun ammunition drum?
- 10 What engine was used in the "Aircar" flown by the late Frank Hawks?

(Answers on page 80)

really a swell guy, and I like him—because I can blame all the dumb things on him. The fictitious Black Bullet has cannon mounted in the wing roots, and Crash Carringer's Hellion has two in the nose. The Keen stories began in June, 1935, and have been in **FLYING ACES** every other month ever since.

Ray Lober, Salem, Ore.:—There are persistent reports that Douglas is building a large bomber, yes. But we know very little about it as yet. It is supposed to be designed to have six engines and to be the "greatest of its class".

John McQuiston, Toronto, Canada:—The initials S.E.5 stand for "Scouting Experimental, type 5," and this plane

HAPPY LANDINGS

BY ARCH WHITEHOUSE



That "Two Years of College" Hurdle

Do you think it's unfair that many physically-fit young Americans are barred from getting into our Air Services by stringent educational requirements? If you do, then read this revealing, straight-from-the-shoulder editorial by Arch Whitehouse.

A VERY AMBITIOUS, but bitter, young man living in Detroit has written me a letter complaining of his lot. The criticisms he makes are not new; we get them in letters from other readers on the average of two or three times a month, and we answer them as they come in. But now let's sit ourselves down and thrash this thing out once and for all.

The young Detroitier writes:

Dear Arch:

I do not believe the U. S. Air Services are giving us air-minded boys a "break." I am 18 years of age, have managed to get in two years of high school, and very much want to become a military pilot. But with circumstances at home preventing my getting any further education, I'm stuck.

Yes, it's that "two years of university training or its equivalent" clause that gets me down. Under the present set up on that education business, my only chance is to enlist and try to work my way up from the private or seaman class—and HOPE to learn to fly in some non-commissioned rank.

And yet, Arch, if war breaks out tomorrow, lads like me will be run through a quick six-weeks training course and then sent into the skies to defend our homeland. That's the sort of thing we face without being given an opportunity to learn the game beforehand. No, until war actually comes along they'll simply keep telling us that we must have those two years of college.

Meanwhile, however, we read that out of 746 college men who took the physical exam recently, only 165 managed to pass. Well, if that's the brand of men the universities turn out, what are the hopes for our military aero future, if they keep demanding this two years of college business?

Why, I ask you, can't fellows like me—who have fair educations and can pass the physical tests—be given a chance to take military flight training?

Those were only a few passages of this fellow's long letter, and I admit to having erased the bitterness he expressed. But from what I've given you of his slant on the situation, you can readily appreciate the argument.

Frankly, I feel for him—and for all the rest of you chaps who are in his boots—for I was in the

same jam myself. I had no university education. But I did have luck, because there was a war on in my day, and I made the most of my opportunities.

But even so I want to point out that my correspondent is mistaken in believing that a perfect body is all that's necessary to make a good fighting pilot. Oh, yes, everything being equal, the average man or woman can learn to fly. But it's not necessarily true that the average athlete has, by the same token, got what it takes to become a good military flyer. The World War proved that wasn't so, time and time again.

There is much more to military flight training than simply learning to take a Boeing P-26a off the ground, put it through a series of modern maneuvers, and bring it back to earth again right side up. I believe the average high school senior could be taught that much in a few weeks. But that wouldn't make him a military pilot. He would not yet be an efficient unit in formation flying, a worthy member of a fighting team, or a worth-while officer in charge of observation shows.

Meanwhile, we grant the truth of our Detroit friend's statement that once hostilities begin, candidates fitting a certain category will be drafted into our air services and taught to fly in short order. But they'll be taught by

the same men who today are leaving our colleges to take up military flying. Few of the Randolph Field boys of today will ever see active service flying. They'll form the Staff crew engaged in shaping the men in the street into an air force. They'll be the lads who'll put the draft chaps through "in six weeks."

That's always the case. In modern conflicts, regular troops don't do the war winning. It's the civilian scrappers who come along later—after six weeks or so of training—who really do the job.

I MYSELF went through all that in my early days as a private in France. I wanted to fly. But when they asked me what my background was, and what education I'd had, I just didn't click.

It wasn't until 1916 came around and the Fokkers were knocking off all the university men, that they were glad to come and ask us machine gunners to volunteer for aerial gunnery work. Yes, by that time, they

AERO BOOK REVIEW

"Wings In the Night," by Willis Fitch, is a swell World War volume revealing the true experiences of a group of Yank flyers on the Austro-Italian front.

AT LAST we've found a book about World War flying that has a new slant—Willis Fitch's *Wings In the Night*, which is being published by Marshall Jones, of Boston.

Fitch was one of a small band of Americans who, through the twists of Fate, found itself brigaded with the Italian Air Service during 1918. Also among this light-hearted band was a somewhat chunky young Italian-American by the name of Fiorello H. La Guardia, a man who has since won his way up to become Mayor of the City of New York.

Wings In the Night portrays in grand detail what the air war was like on the Austro-Italian front. This is a setting new to most readers; the characters are likewise new and the action is different. The old Spad-versus-Fokker story does not fit in here, nor does the German baron spurting fire and brimstone have a place in this volume.

Instead, we read of the true feeling of
(Continued on page 79)

were very nice to us. But instead of doing 50 hours over the line as gunners or observers and then going to England for flight training and commissions, most of us were kept out there flying every day for more than a year.

Nevertheless, a few of us lived through it and eventually got back to the flying schools. And once I got into the School of Military Aeronautics, I knew why they had asked about my education. I was licked! I didn't know what the instructors were talking about, even though I had logged hundreds of war-air hours!

How I got past it all, I'll never know. Sure, guns, motors, bombs, and cameras were a cinch; and with all my air experience, I learned to fly solo with less than fifteen minutes on an Avro. But I was far from being a military pilot. My lack of the formal type savvy, particularly in mathematics, almost ruined me.

I plugged, I battled, I sweated at that math stuff. And still, more often than not, it stumped me. You see, I had never had enough training in the grand old art of studying. Why, I took three times as long as the others to conquer the measly Morse code requirement of sending six words a minute, and that nearly resulted in my being booted out. I didn't know how to concentrate, and the things I did have on the tip of my tongue were of little credit to me because I didn't know how to express myself. Yes, with all my actual war experience, I was a dud in the classrooms.

Today, I point to my wartime notebook as a classic of positive ignorance. How did I ever pass my navigation, my wireless, and the ground subjects so necessary if I was to become an officer? Don't ask me! I still think that I was "shoved through" by a couple of kindly officers who felt sorry for me.

In short, I knew the observation game, the gunning game, and after my new training, the flying game. But I didn't have the right background fitting me to take even the most limited command. I had to be led, and all because I lacked that certain something in educational experience. I do think that I had the native ability, all right—and very likely our young Detroiters has it, too. But there's still that lack of educational training to be considered.

So there you are, and you can't duck it. Physical fitness isn't the whole story. The fact is, that in all the years I watched flyers out there in France, I do not recall one single instance of Apollo-like physique being responsible for the careers of the great World War pilots.

Guyneimer was a consumptive—but he had brains. Bail was small, almost dainty—but he had a marvellous mind.

(Continued on page 50)

The Airmail Pals

• • •

GOOSE CREEK! Now there, airmail missive-makers, is the name of a town the R.H.P.D. had always thought was only a fiction-town, designed and developed by the authors of those woolly western yarns. But sure enough, Goose Creek's a real town! It's two of 'em, in fact—for one's located in Texas and the other in West Virginia.

It's the Texas Goose Creek that interests us right now, though, for that's the home of Don Williams, one of our newest Airmail Pals. Don wrote recently for a buddy in England, and we tied him up right away with Ernest Law, a photo-snapper of Manchester. Ernest, by the way, sent a swell shot of the Westland "Lysander" and some top-notch dope on the Supermarine "Spitfire," both of which items, of course, we forwarded to his new Goose Creek correspondent.

Another Manchester lad is Joe Broadbent, who goes by the peculiar nickname of *The Mule*! Joe, who's about 18 years old and enjoys dancing, arguing, tennis and Rugby, wants a pal who *must* be interested in ballistics and radio. So we'll send his letter to the first suitable applicant.

Sherman "Bud" Jonas, of Tacoma, Washington, comes

Indecent and pediment!
In this corner, we have . . . ! Yes, I always, it's none other than the R.H.P.D.'s Kitty engaging in a mental pastime of burlesque for our coverage. And thanks to those of you who observe all the A.P. rules (there are some of you who don't) he's been doing pretty well lately. There, there, Pussy! Here we come with your nice, warm milk. SHUT UP, or we'll roast you.



through with one of the best letters the R.H.P.D. has read in some months. And considering the headlines in the newspapers nowadays, his comments are worth quoting. Says Bud:

"I believe that the Airmail Pals idea does more to promote international peace than would a dozen peace conferences. Getting acquainted with other people and learning first-hand about their personalities and ideas is what counts. For instance, when I was in High School I had several Japanese friends. Upon graduation I lost track of them. Now, along with everybody else, I find myself being turned against the Japanese because of the influence of the newspapers. And I'm inclined to forget how swell those Japanese pals of mine were—and how truly enjoyable have been all of my *personal* contacts with those sons of Nippon.

"And so," continues Bud, "I'm for this Airmail Pals idea—we should *all* be not only willing, but even anxious to work toward international friendship by learning more about 'the other fellers' all over the world!"

With these statements of Bud's, we wholeheartedly agree. For we, too, have gained a better understanding of people on other shores through personal contacts.

But back to strict business now. Bud Jonas wanted to contact new pals in China and Japan. Unfortunately for him, though, F.A. isn't sold regularly in either of these countries—so we couldn't oblige him. Instead, we found a swell pal for him in England. George Weston, of London.

And now as a winder-upper, we'll refer all you readers of this department to the "How to Get an Airmail Pal" box alongside. We want you *all* to read it over again, for we've rewritten it and cleared up—we hope—some of the questions that Airmail Pal writers-in-for have been asking. G'bye!

—THE RIGHT HONORABLE PAL DISTRIBUTOR

HOW TO GET AN AIRMAIL PAL

FIRST, write the best possible letter you know how. Use your best pen-and-ink handwriting or a typewriter. In your letter, introduce yourself fully for this is the letter we'll forward to the pal we'll pick out for you. Tell your age, your interests in aviation, your other hobbies, and any additional items that might interest a new friend.

Then on a separate sheet tell the R.H.P.D. what kind of an Airmail Pal you want. Send your letters to Airmail Pals, FLYING ACES, 67 West 44th St., New York, N. Y. Be sure to enclose a stamped, self-addressed return envelope, plus five cents in stamps or coin for each pal requested (our fee for the R.H.P.D.'s "Kitty"). We'll try to supply you with a pal in line with your specifications, although we cannot guarantee to fill the bill exactly every time.

Your new pal's letter will be sent to you, and yours to him—after which you will correspond direct.

Do not ask for "lists" of pals. We cannot supply them.

REGARDING FOREIGN PEN PALS

PLEASE NOTE that FLYING ACES' foreign circulation is only in English-speaking countries (specifically, Great Britain, Australia, New Zealand, and Canada). Therefore we cannot undertake to supply you with pen pals in Germany, France, China, etc.

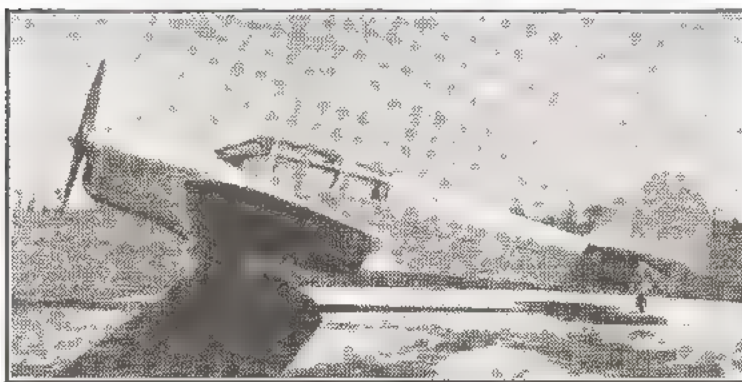
If you are an American resident and want an overseas pen pal, do not write a pen pal letter. Instead, send us a short note telling in a general way what kind of a chap you are and what kind of a pal you seek. Enclose a stamped, self-addressed return envelope and five cents for each pal called for. A foreign writer's letter will be sent to you, then you may correspond with him direct.

If you live outside of the United States and want an American pen pal, write a complete letter as described in the first paragraph of this box, and send it *with* the return envelope but *with* an International Reply Coupon worth five cents. Get the coupon from your local postoffice. Your letter will be forwarded to an American correspondent, after which you need only wait for his reply.

MORE POWER TO YOU!

HOW JOHNNIE FLEW THE "Y"

Latest of the private jobs to be turned out by Britain's Percival Aircraft Company is this Vega Cub. It's a three-seat cabin monoplane built along the lines of the earlier Men Gull, but using the 200-h.p. D.H. Gypsy Six engine. Already very popular in England, it cruises at 155 m.p.h. and has a top speed of 175.



On the Light Plane Tarmac

MORE POWER TO YOU

IT HAD to come eventually, of course. In fact, we of FLYING ACES have been predicting it for some time. What we're driving at is that the 35-40 h.p. motor, so long the accepted power plant in our light planes, is no longer acceptable.

Some months ago we wrote that the 40-h.p. engine, while efficient within certain limitations, was hardly the class of motor for pilots who desire to make cross-country flights. We mean cross-country hops in the ordinary-jant classification—not the over-land stunts by experienced factory men who do these things just to prove they can be done with their particular ship.

In short, the 40-h.p. motor is not powerful enough to assure real safety on such journeys except under nearly ideal weather conditions. Pilots attempting 300-mile flights have all too often had to land en route because of changing weather conditions or increasing headwinds. Their 40 horses were good enough in light breezes—but not against a 25 m.p.h. wind.

And so, friends, we now note that several small plants may be souped to a 50 h.p. and up (though the 50-h.p. motors now offered by Continental and Lycoming are not cases in point). Meanwhile we note that Aeronca has dropped its own engine to take up the game with the Continental or the new Menasco.

Another reason for the additional horsepower is the new swing to side-by-side seating in the cabins; for their is a report out that the new Piper Cub using the s-by-s arrangement appears to be a bit underpowered with even the 50-h.p. engine which means that the Piper people will be looking for some plant that'll turn out more Umph!

Needless to state, some one will have to pay for all this. Prices will rise, the running expenses will be greater, and in all possibility the insurance will be jacked up.

The point we object to in a case like this is that some of the motor manufacturers will not want to bother to design new motors to turn out that extra power. Instead, they'll probably soup up the compression

on the engines they already have, or gear them to add a few more kicks per sec. Of course, this sort of thing is all right in large power plants (where they somehow manage to get a 700-h.p. job up to 800 or 850) but to jerk up a 50-h.p. motor almost 30 percent without any material changes in general structure is taking too much liberty with the safety element. The light plane is no place for a juiced-up job. It would be far better to spend a few more dollars in the interest of flying security.

As we said above, we were among the first to suggest that light plane power be increased. But we had no idea that the suggestion might be taken in this manner. We had hoped that the motor manufacturers would increase power by more acceptable means. They should have been prepared to do so, too.

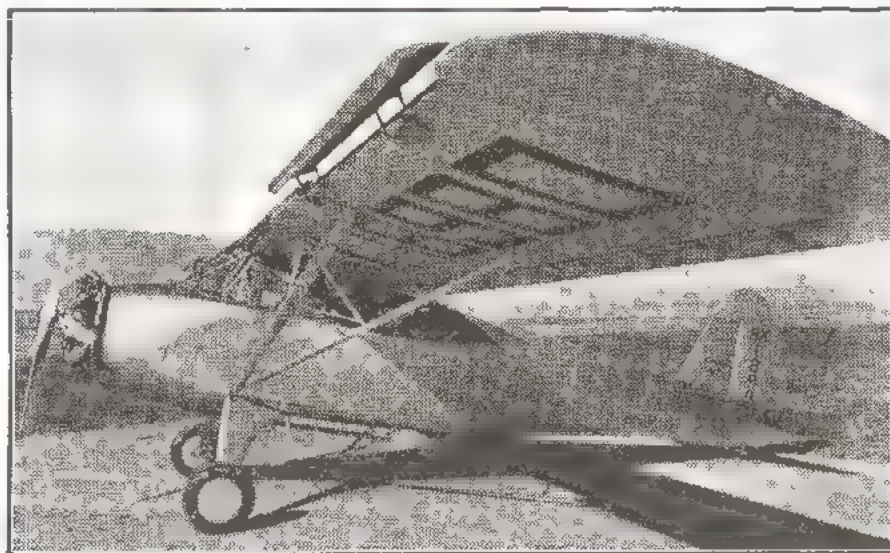
Since it has been obvious for a number of years that eventually the power would have to be raised to meet the new requirements, no such makeshift method of handling the problem was called for. The companies knew that 40 h.p. is sufficient for nominal light plane flying. But they also knew that once a man has logged a hundred hours in the air he begins to seek new fields to conquer. And to do so, he requires more power.

The light plane manufacturers have been doing fairly well in the past few years, because they have been building good 40-h.p. planes. But if they hope to continue to retain the good will of the sport plane flying fraternity, they either should keep their products in this 40-h.p. category, or else turn out a real 75-h.p. job, not just a souped-up version of their lower-powered models.

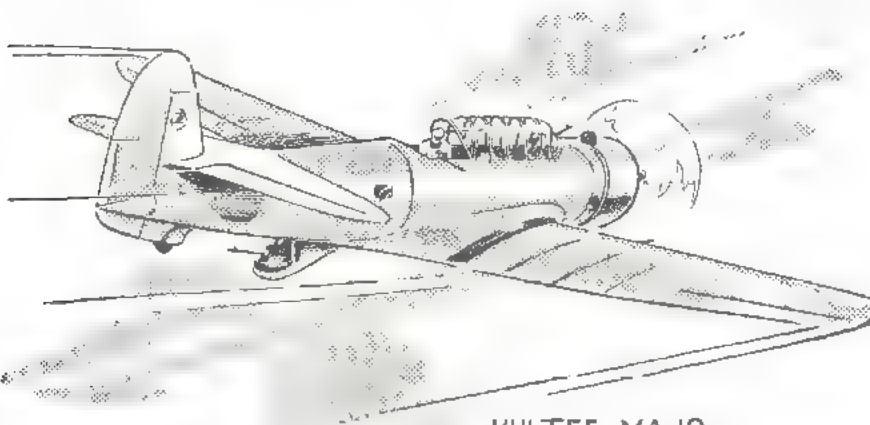
Everyone knows that the jazzing-up of lighter-powered

(Continued on page 73)

Right. Here's the very newest thing in American sport craft—a 38-ft. span, two-seat, side-by-side cabin monoplane which, as this is written, is just completing its Government flight tests. It employs the 90-h.p. Lambert motor giving the job a top speed of 125 m.p.h. Note especially the Handley-Page wing which virtually obviates stalls, and the wing flaps, which permit a safe 30-m.p.h. landing speed. As for the name of this impressive ship, we're a bit confused, for while its tail fin bears the name "Brown I-5", the company's news release refers to it as the "Beco I-5". Nonetheless we do know that it was turned out by the Beco Company, Inc. of 5844 Inskip Ave., Los Angeles, Calif.



Modern Planes Album



VULTEE YA-19

THE VULTEE YA-19
CONSIDERABLE MYSTERY attends this new plane which is to be bought in wholesale lots by the Army Air Corps. Actually, it is listed as the YA-19, but it does not appear to differ much from the V-11-GB model turned out about three years ago, and sold in fair sized lots to several foreign countries.

At any rate, semi-official reports have it that this YA-19 three-place attack plane has passed all experimental tests at Wright Field. It is

rated as a 230 m.p.h. job with a full crew and 600 lbs. of bombs and has six machine guns, four in a fixed position in the wings and two that are movable, one being for the observer and one for the bomber. Something like \$297,180 is to be spent for the first seven of these planes and \$114,097 for extra engines.

The power plant is a Twin-Wasp, giving a take-off rating in the neighborhood of 1,000 h.p. The ship in general is all-metal, the wings being low-wing cantilever with removable

outer panels. The fuselage is monocoque of elliptical cross-section.

The pilot sits in the forward compartment in line with the leading edge, the observer-radio man has a high position at the rear portion of the covered cockpit, and a third member of the crew is accommodated in a seat well aft where he can use the prone-position bomb-sights, handle a camera through an aperture in the floor, or fire the undertail defense gun aft.

The under carriage is an electrically-operated retracting job such as has been used on Vultee ships for some time. As for the bombs, they may be carried inside the fuselage or in racks beneath the body or under the wings.

Vultee's V-11-GB three-seat attack bomber, as pointed out above, was similar to this ship. However, the V-11-GB used the 850 Wright "Cyclone" engine, had a much lower cockpit hatch, and carried a rear, tilting turret which was somewhat different in design. A number were sold to Turkey and to the Chinese Air Force.

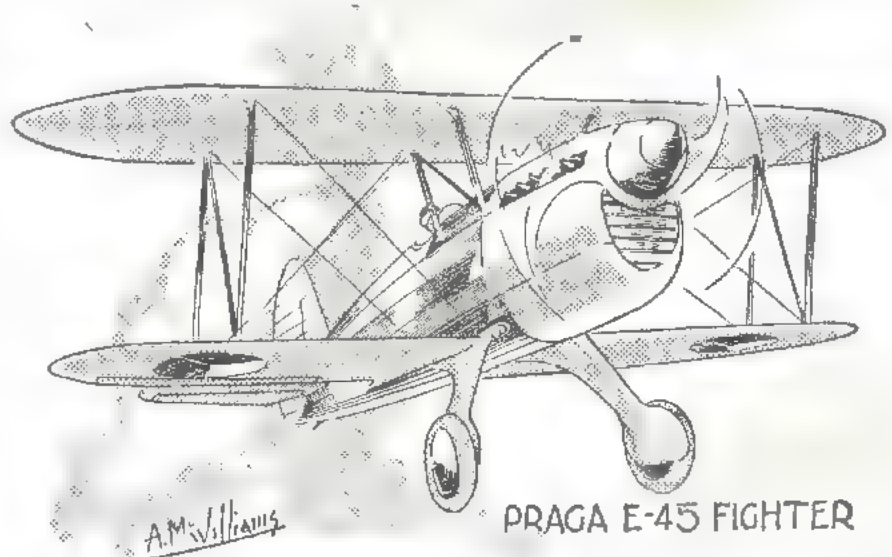
It is probable that these new YA-19's have been hurriedly ordered to supplement our Curtiss Y1A-18's.

THE PRAGA E-45 FIGHTER
THE NEWS of the day keeps Czechoslovakia in the headlines and it is natural for us to wonder what aerial defense the Czechs can muster if a fight does come off regardless of the peace pacts.

As we have pointed out before, the Czech plane designers are no slouches when it comes to turning out good fighting equipment. They are excellent workers in metals and intricate mechanisms, and so far their home-developed fighting craft are comparable with the best now being turned out on the continent.

In the accompanying sketch we offer the Czech fighting plane known as the Praga E-45. It is manufactured by the Ceskomoravska-Kolben-Danek firm of Prague. A single-seat biplane powered with a British Rolls-Royce Kestrel XVI engine, it has a top speed of 251 m.p.h. with a full military load. It cruises at 217 and lands at 63.

The E-45 employs wooden wings covered with plywood. The upper airfoil is built in one piece and is carried at the center section on slightly-splayed N-struts and on upright N-



PRAGA E-45 FIGHTER

struts between the planes. Aerodynamically-balanced ailerons are carried on the lower wings only. The fuselage is made of chrome-molybdenum steel tubing. Dural plates cover the engine cowl and the front portion of the ship to a point aft of the cockpit; fabric is used on the rest of the body.

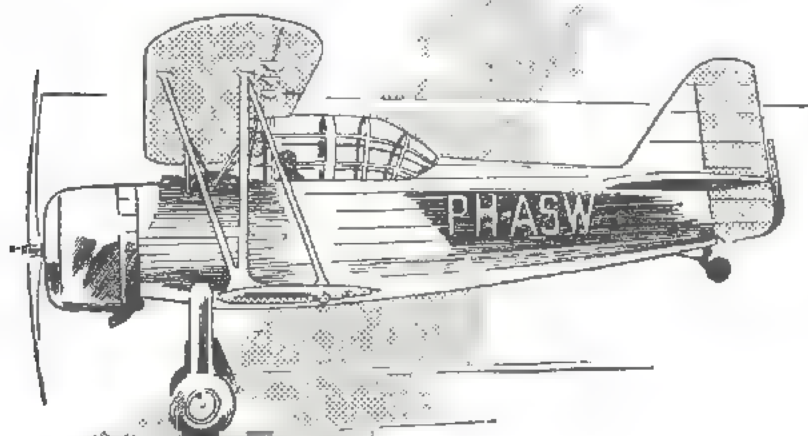
The cockpit may be flown open

style or with a sliding hatch. The seat accommodates a back-type parachute and is adjustable as to height and distance from the rudder bar. Two fixed machine guns, each carrying 900 rounds of ammunition, are mounted in the nose.

Either the Rolls-Royce or the Hispano-Suiza 12Ybrs engine may be used.

FOUR OF THE LATEST MILITARY MACHINES

In this batch of new war craft, we offer a three-place attack plane, a single seat fighter, an escort fighter, and general-purpose carrier job. And the nations represented are the United States, Czechoslovakia, the Netherlands, and France.



KOOLHOVEN ESCORT FIGHTER

THE KOOLHOVEN ESCORT FIGHTER
WHETHER the Koolhoven firm in Holland is making bids for some British trade, we're not sure; but most British aviation writers are now sounding off on the sterling qualities of the new Koolhoven F.K.52 biplane, termed an escort fighter.

This plane was recently displayed in England by Heer Dick Asjes, chief test pilot for the Koolhoven concern, and according to reports, she's a beautiful piece of fighting equipment.

The F.K.52 is a two-seater. And viewing the ship from several angles through the means of photographs,

we get the impression that the narrow-chord wings of this job don't offer a great deal of wing area.

This new machine carries either two fixed cannon or machine guns in the leading edge of the upper wing outside the prop arc, and the observer has a movable gun in the rear compartment. In addition, the 52 is fitted with under-fuselage bomb racks carrying 254 lbs. of explosive "eggs."

Using the 840-h.p. Bristol Mercury engine, it has a top speed, fully loaded, of 236 m.p.h. and cruises on 65% throttle at 203 m.p.h. For a two-seater of this type and load, this performance is particularly good.

The wings use two wooden box spars, plywood ribs, and what is known as "madapolam" covering. Further investigation discloses that madapolam is some sort of patented fabric. The wings, supported on splayed-out center-section struts and with metal N-type interplane struts, have what one English writer calls "neat leather bootkins" over the rigging points. The ship carries ailerons on all four wings, and the tail unit is of cantilever type.

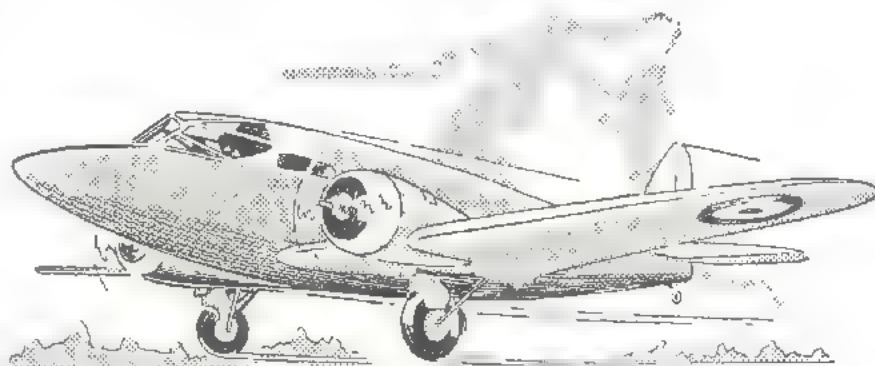
The fuselage is a welded-steel structure, fabric covered.

THE POTEZ 56-E MONOPLANE
BELIEVE IT OR NOT, we have discovered a new military type (see sketch). And it's France that turned it out.

Can you imagine a two-engined, multi-place cabin monoplane being used for a shipboard, general purpose military plane? Well, that's what this Potez 56-E G-P ship was developed for.

Actually, the plane is a military adaptation of the Potez 56, a light transport monoplane. But it has been completely revamped, and as a Navy type it has been modified to meet certain requirements of the Ministry of Marine. A completely new fuselage is used, and the outer wing panels are detachable so that the plane can be passed down the elevators aboard the French aircraft-carrier *Bearn*. The wings may be completely detached by four men in 4½ minutes.

The detachable wing sections carry pneumatically-operated, split trailing-edge flaps. The fuselage has been changed so that it has a decidedly pointed nose. Moreover, the body has been strengthened to take the shock of deck-arrester gear.



POTEZ 56-E MONOPLANE

The pilot is located in the forward compartment. Aft of the control seat is another compartment which may be used as a radio cabin, aviation office, or the main operation point for the bomber officer. Included are floor traps which may be used for bomb-sighting, photography, or emergency exits. Still another exit has been built into the roof so that the crew may escape in case of a forced landing at sea.

Power is supplied by two 185 h.p. Potez 9Ab engines, which give the

ship a top speed of about 180 m.p.h. The engines are fitted with Ratier electrically-controlled props, and fuel tanks are carried in the outer wing panels.

The wheels fold backward and upward into the rear portions of the engine nacelles.

It may be hard for us to understand the actual value of such a plane, but it is quite possible that it provides accommodation for Staff officers commuting between shore bases and the fleet.

Flying Aces Club News

Welcome to our F.A.C. tarmac, new members and old! We have big news to share with you this month—and the biggest of it all concerns that swell new epic air film, "Men With Wings," and the signing of its star player, Fred MacMurray, as an Honorary Member of our world-wide outfit! Read all about it, buzzards—and about all the recent ace-high "doings" of the various F.A.C. skymen and squadrons.

* * *

GREETINGS, Clubsters. Yes, Clint Randall's feeling fine, thanks, and one reason for the unusual amount of good feeling is that Ye Editor has just told me that he can spare a little extra space for this month's Club News, so here I am all set to spread over two pages again and chew the rag about which Club members are doing what—and where they're doing it.

And right at the start, I want to mention that you fellows all over the country have helped our advertising department chalk up a nice shiny star. How come, you say? Well, since you all read that swell article, "Hollywood's Skymen Re-Fight the War!" in last month's F.A., telling all about the big new dramatic aero movie, *Men With Wings*, simply scads of you fellows have bombarded both F.A. and Paramount Pictures with letters asking *when, oh when*, is that picture going to come to your town!

Fred MacMurray, who stars in the picture, was signed up as an Honorary Member of the Flying Aces Club hardly a week after our last issue hit the newsstands. It was F.A.C. Pilot Walt Kennedy, of Jersey City, N.J., who corralled him. Nice going, Walt!

But to get on with the facts. Flick the pages of this issue back to Page 3 right away, and read down every single word of the ad you'll find there. It's an advertisement about Paramount Pictures' latest film, *Men With Wings*—and fellows, if you want to see a sky picture that's *really* a sky picture, you want to see this one!

Honorary Member MacMurray is top man in this production, which is all in technicolor and tells the story of aviation from "Ace to Zoom." Besides Fred MacMurray, there's a whole hangarful of other film favorites of F.A. Club Members—Ray Milland, Louise Campbell, Lynn Overman, Kitty Kelly, and our old pal with the pitot throat, Andy Devine.

A sky epic like this seems to be made-to-order for F.A. readers. Clint and others of our staff here at GHQ have seen the previews and we're telling you, gang, that we were mightily thrilled. So here's our suggestion—and it'll let Honorary Member MacMurray know that the Club's back of him 50,000 strong—

Either write, phone, or see your local theater manager and then just rev up to him with this sort of a line:

By Clint Randall

National Adjutant, Flying Aces Club

"I'm a member of the Flying Aces Club, and all of us in this vicinity want to see *Men With Wings*. Get it for us, huh—as soon as you can book it! Then we'll three-point into your film hangar."

And since this picture is bound to play a mighty big part in developing the Flying Aces Club's own platform—the advancement of aviation—why not attend the theater in a body? Tell the manager the local F.A.C. unit is showing up on such-and-such a night, and you'll find that he'll be glad to cooperate with you in such a way that you can't help but enjoy the entire show.

Indeed, we urge that F.A.C. Flights with modelers of outstanding ability fellows like Wally Bickmire, Eddie Munzing, Jim Hunter, Ace Stromberg, and the thousands of others—might well arrange a model display in the theater lobby. In that way, a lot of real attention will be attracted to the aims and ideals of the Flying Aces Club.

And if you'll send us photographs, news clippings, or statements of the theater managers for whom you prepare your displays, we'll see what might be done in the way of suitable recognition for your work! How's that for a starter?

NOW, to rev right into our regular monthly reports, let me tell you about Howard Goodman, of Cushing, Okla.—an F.A.C. who this summer got himself right into the middle of a stack of sky-fights as Uncle Sam's pilots scrap 'em today. A member of the Oklahoma National Guard, Howard was over in Texas for the Third Army Maneuvers that you read about in your local newspapers.

But Howie didn't have to read about 'em—he hiked, and flew, and sweated, and ate good old Army slum with sand in it all the way through the maneuvers. Anyway, here's what young Goodman says about the big Texas "war"—

"It seemed that the air was alive with planes all the time. Quite a bevy of Douglas O-46A's were taking part. The Brown Army (my side) had planes identified by a blue stripe running chordwise over the wings, while the enemy Blue Army flew ships that bore just the regular Army markings. Seems as though they might have been a little mixed up—for I would think the Blues should have had the blue stripe instead of being unmarked!

"Well, the odds were somewhat even, because both sides had the same line-up of planes, or approximately so. And one time we were strafed and bombed by a number of low-flying N.A. jobs. I do believe that if they'd lowered their wheels they would have scratched our dandruff for us! And we weren't standing on tiptoe to meet 'em, either!

"I belong to a medical regiment, and this being a sham war, we didn't have much to do in the maneuvers except hide. The ambulance company directly south of us, though, seemingly didn't have time to camouflage their ambulances, and they were completely wiped out—in the official reports, that is. I don't know how many more companies of our regiment were similarly annihilated. But Clint, that one ambulance outfit certainly got a royal rooking!

"Being a pill-roller, I was attached to an Infantry company part of the time, and got to go right up



We've always been proud of the modeling ability demonstrated by members of our Club, and here's a job that proves to us that our pride hasn't been misplaced. Dick Green, an old-time British Clubster who lives in London, turned out this excellent replica of the Short-Mayo composite group. Glad as we are to have this picture of Dick's handiwork, though, we're gladder still to hear again from Dick himself, for he's been hovering in a "cone of silence" for several months. Come in again soon, Dick.

into the front-line action. Here, I saw a dogfight between a couple of Douglas ships. Our man camped down on the Blue man's tail, and the pilot couldn't shake him loose with *any* of his tricks. A Regular Army Air Corps major was referee, and he quickly gave the victory to the Brown pilot—which was us. I heard this same major, by the way, telling of goofy adventures while shooting at towed sleeve targets. And were some of 'em rich!"

Well, fellows, Yours Truly—Clint Randall, *himself*—is right here to tell you that you *can* have fun on Army maneuvers. 'Frinstance, I'll never forget the time our outfit was —

(Editor's Note Two long and wearisome pages of copy had to be tossed into the waste basket at this point to save you readers from being bored stiff.)

AND SO, we'll now pass on to the latest Toronto report sent in by Ross Smyth. Ross, you'll recall, is skipper of one of our most active F.A.C. units. Well, here's a few of the men Ross has lined up as speakers for the big Fall meetings now planned by the Toronto outfit:

Captain Erroll Boyd, first Canadian to fly the Atlantic; George Drew, well known Canadian who has his own cogent ideas about the efficiency of Canada's air defense system; Jim Follett, aviation instructor at the University of Toronto; Mayor Day, Herbert Hollick-Kenyon, F. L. Cousins, C. Leavens, and several other notables.

Ross, you'll notice, believes in doing things *right*. And instead of letting the outfit go to pot during the summer months, he's spent hours of time writing letters to all the members in order to keep the crowd together.

A couple of weeks ago, Ross stopped in at GHQ and we all were mighty pleased to see him. He was on his way by air from Toronto to Miami, a trip which he had won through a contest run by Captain Boyd. The Captain accompanied Ross down as far as New York, and while here, they attended a luncheon with Doug Corrigan at the Newark Athletic Club. They met Major Seversky, Roger Q. Williams, and many other aero leaders.

"But the most surprising thing," Ross tells us, "was after I had left you in New York and headed by plane for Washington. Eighty minutes after taking off at the Newark Airport we came down at the Capitol's Hoover Field to find thousands of people jamming the entire area. Even the roof of the Administration Building was packed with people! In fact, our pilot had difficulty keeping away from the crowds as he taxied the ship up the field toward the exit gates.

"We couldn't figure it out at all! But lo and behold, no sooner had we landed than down dropped an American Airlines' ship, and who was aboard it but good old Doug Corrigan, whom we'd seen in Newark just the day before!"

So now Ross Smyth is back home again in Toronto, with over 3,000 miles of flying under his belt, together with a nice assortment of airline meals of turkey, chicken, and ice cream, *plus!*

UP FROM Melbourne, Australia comes a letter written by Harold Cameron, one of the Flying Aces Club's charter members. Harold does a little reminiscing for a change, and tells us about some of the other earlier members of the outfit.

"Because of changes in residence or work on the part of many of us, our big Sydney Squadron, as you know,

has broken up. And now several of us are in the aviation industry. Two of our former officers are now in the Royal Australian Air Force, one training for his wings, and one a qualified Aircraftsman. Two more are in commercial aviation here in Melbourne, and others are scattered about the Dominion.

"I have reached my first ambition, for I'm now a fully qualified Aircraft Engineer. Gosh, Clint, it took five years! That's a long time to study and train, but it sure was worth it, and I'm starting now to reap the harvest. I'm glad I stuck! For now I have a fair knowledge of work in most branches of the aircraft industry. I know air-frames, engine servicing, maintenance, and the like. And I've made a special study of the manufacture of aircraft fittings and components, layout work, templates and jigs, installations, etcetera."

And in the near future, fellows, Hal will be coming up to the United States. Like scores of other F.A.C. members who have come to know Harold through correspondence, we'll be mighty happy to see him.

And now we hear again from Bob Long, skipper of the F.A.C. unit 'way up in Newfoundland. Bob's been sort of quiet lately, but we haven't worried, for we know the outfit's been active all the way through. Along with his letter, Bob sent us a formal acceptance of Honorary Membership signed by D. M. Martin, president of the Bellanca firm in Canada.

In his letter to Bob, Mr. Martin spoke very appreciatively of the Flying Aces Club, and closed with these words:

"We are very pleased to encourage anyone interested in aircraft and particularly the type of work that you are doing."

And so, F.A. Clubsters, we're mighty glad to welcome Mr. Martin into our world-wide organization. Bob Long also mentioned several other prospective H.M.'s. And from the facts he gave me concerning each, I know the Club will be pleased to act favorably upon their acceptance when Bob "comes through" with their nominations.

Herb Belanger, of Woonsocket, R.I., pops in this month with a howl. Accompanying his letter was a series of Woonsocket rews paper clippings describing and illustrating a new plane being built by George H. Armitage, who lives near the city. And the

thing that raises Herb's ire is the fact that one of the clippings says that when the job is finished, it will be "trailed" over to the Providence or Boston airport for flight tests.

"Why doesn't he test it in Woonsocket?" asked Herb. "Because," says he in his answer to himself, "Our local airport is no better than a wheat field! Phooey!"

And that, it would seem to GHQ, offers an excellent opportunity for Woonsocket F.A.C.-ers to do a little local campaigning toward a more air-minded city.

AT LAST we've traced down the ancestry of that Cal-Ireland flyer, Doug Corrigan. He's apparently a descendant of Phineas Pinkham! At least, that's the conclusion drawn by F.A.C. Bob Hardwick, of Fort Pierce, Fla. Bob clipped a profile picture of Doug from a Fort Pierce newspaper and then said to himself, "Where have I seen that guy before?"

A few minutes thought brought him to turn to his F.A. file. And there, leafing through the pages, he soon discovered a profile picture of another flying lad in Corrigan's exact same pose and attitude. Pasting the two

(Continued on page 63)



Just read the letter above, fellows, and you'll see how one of our F.A. stories appeared in a lad who's in a real position to judge! Jim Garber, of Langley Field, who wrote the letter, would like to contact other F.A.C.'s by short wave. He calls letters are WSELJ a d h r operators on the 20, 40, and 80 meter amateur bands. And if you aren't a ham, shoot him a letter in care of the 29th ("Pineapple Pete") Bombardment Squadron.

JOIN THE FLYING ACES CLUB

Honorary Members

President and Mrs. Franklin D. Roosevelt
Vice Pres. John Nance Garner

Cassey Jones	Rear Admiral Byrd
Wallace Beery	Capt. Eddie Rickenbacker
Al Williams	Capt. W. A. Bishop
Col. Sorenson	Major G. A. Vaughn, Jr.
Major von Schieleh	Willy Coppens
Lieut. Col. Ponsard	General Balbo
G. M. Estancia	Walter H. Beech
Capt. B. Sergievsky	Frankie Thomas
John K. Northrop	Dwaine L. Wallace
Colonel Roscoe Turner	Josef Veltjens
Charles W. A. Scott	Maj. A. P. de Seversky
Richard C. DuPont	Donald W. Douglas
Maj. A. W. Stevens	Major C. C. Moseley
Capt. O. A. Anderson	Clarence D. Chamberlin
Major Fred Ford	Mrs. Charles S. Bayliss
	Lieut. Col. Theodore Roosevelt

Official Charters

F.A.C. Flights and Squadrons are recognized at GHQ only after they have received their official charters. These illustrated documents, printed on fine paper and portraying various features in the field of aviation, are excellent for framing and display. Their inspirational text is in keeping with the high ideals and aims of our Club. Each charter application must include a full list of proposed group members and their addresses. Each of these members must have his regular F.A.C. card, obtained by clipping and sending in the membership coupon printed on this page. If applications are approved, Flight Charters are issued for 25c, and Squadron Charters for 50c. Send the correct fee with your application. It will be returned if the Charter is not granted.

WIN YOUR WINGS

Save This Whole Coupon for
CADET OR PILOT
insignia of the F.A.C.



All members with Official Membership Cards are eligible for Cadet Wings. This coupon, with two others and 10c, entitles members to Cadet Wings. Do not send this coupon alone. Save it until you have three. Then send them in all together with a self-addressed envelope and 10c to cover cost of wrapping and mailing.



All enrolled members who have won their Cadet Wings are eligible for Pilot's Wings. This coupon, with four others and 10c, entitles Cadets to Pilot's Wings. Do not send this coupon alone. Save it until you have five. Then send them all together with a self-addressed envelope and 10c to cover cost of mailing.

Send the Whole Coupon

regardless of which kind of wings you wish. Separate sets of coupons are needed for each insignia. Candidates send 15c, or three International Reply Coupons. Overseas readers send 1/- or five Reply Coupons secured at the Post Office. Only one pair of either kind of wings to a member. If yours are lost, send 25c for new ones. (2/- overseas). [124]

Do Your Full Share to Advance Aviation

TO advance the cause of aviation over 50,000 men and women, boys and girls, have banded together to form the FLYING ACES CLUB.

It is the easiest club in the world to join. Just clip the membership coupon, fill out, and mail it to GHQ with a stamped, self-addressed envelope. Your official card will then be forwarded to you. After joining, you can quickly win promotion and the right to wear the various insignia of the Club.

In the FLYING ACES CLUB there are two kinds of local organizations, known respectively as Squadrons and Flights. A Squadron must have eighteen members including its leader. A Flight must have a total of six. You can start either of these groups in your own community by enrolling your friends in the Club, then applying for an official charter as detailed in the column at the left. Each member must hold an F.A.C. card.

Meetings and activities are conducted among the squadrons and flights according to the wishes of the members. GHQ has established no rulings in this respect, nor are there any dues or red tape whatsoever. The entire idea of the Club is a common meeting ground in an international organization for the lovers of aviation in its various phases. Many local Squadrons and Flights hold regular contests and public events. Many hold weekly meetings for model building, and instruction, and even regular flight training.

Awards and Escadrille

After the membership card, and Cadet and Pilot's wings, comes the Ace's Star. This is awarded for enrolling five new members, using, of course, a separate coupon for each. As an Ace, you are then eligible for membership in the FLYING ACES ESCADRILLE. Then you may win truly handsome awards. Among these are the Distinguished Service Medal and the Medal of Honor, two of the finest decorations that have ever been designed.

Any member who has reached the rank of Ace is eligible for membership in the FLYING ACES ESCADRILLE, an advanced organization which replaces the old G-2 unit and opens the way for participation in a definite program contributing to the forward movement of aviation.

To enroll, an Ace must apply direct to Escadrille Headquarters, giving his name, age, address, rank, and highest award already won in the Club, and enclosing a stamped, addressed return envelope. If he is approved for membership his instructions will be forwarded. Membership in the Escadrille is limited to American and Canadian members only, at present.

Special Service!

This Aviator's Positive Identification Bracelet



Registration and Bracelet Only 25c!

A valuable identification service for F.A.C. members is now offered with our World War type aviator's bracelet. Every one now issued will bear a serial number - which is the key to your confidential identification record on file at GHQ. In emergencies where prompt identification is needed, this number may be sent to GHQ, and identification facts will then be furnished. When ordering, send your name, address, occupation and full physical description: age, height, weight, color of eyes, hair and complexion, etc., together with name and address of nearest kin. Overseas readers may receive bracelets and be registered for 2/- in coins or Int. Money Order for same amount.

Keepers of the Log

In order to keep in touch with GHQ, every squadron should appoint a member with a facility for writing as Keeper of the Log. It shall be the duty of the Keeper of the Log to send in regular reports of interesting doings of his squadron. His is an important job, because it is only by means of interesting squadron reports that life can be given to the Flying Aces Club News.

Photographs, too, are an important consideration for the Keeper of the Log. Either the Keeper himself, or any other member with a camera, should keep a photographic record of the squadron's activities, for reference purposes, to show prospective new members, and to allow a selection of pictures to be sent to GHQ for reproduction in the Club News.

The cost of film, prints, etc., would be a legitimate charge against the squadron's own treasury or could be covered by members' contributions. A number of flights and squadrons, incidentally, send us prints which have been taken, and completely developed and printed by members.

Correspondence

In all correspondence with GHQ where a reply is desired, enclose a stamped, self-addressed return envelope with your letter. GHQ receives thousands of letters weekly and cannot undertake to answer those who do not heed this rule.

Official Supplies

Due to popular request, we have ordered a new supply of F.A.C. stationery and official F.A.C. (paper) pennants. The stationery is of high quality with the Flying Aces Club letterhead attractively hand-lettered, and the price is amazingly low - 100 sheets, postpaid for 25c. The attractive pennants (with glue on the back) sell at 6 for 10c or 20 for 25c.

We also have a new supply of swell embroidered wing insignia for cap and sweater. They're available at 35c per pair, or 20c for the sweater emblem and 15c for the smaller one for the cap.

Overseas prices: Stationery, 100 sheets for 2/-; pennants, 20 for 2/-; wing insignia, pair, 2/-; large emblem 1/8, small emblem 1/4.

December Membership Application

I, the undersigned, hereby make application for membership in the Flying Aces Club. I agree to live up to its rules and regulations, to foster the growth and development of aviation, and cooperate with all other members in the work of spreading aviation information, building up confidence in flying for nations, defense and transportation. I will aim to build up the Club and its membership, and do my best to win the honors that the Flying Aces Club offers.

My name is _____
Age _____ (Years)
Street _____
City _____ State _____
Do you build models? _____
Note: This application, enclosing a self-addressed stamped envelope, must be sent to GHQ. Overseas readers send the application self-addressed envelope at an International Reply Coupon worth its equivalent at the Post Office.

FLYING ACES CLUB, 67 W. 44th St., New York

With the Model Builders



Left: This Cyclone-powered Sheraton "Cade" Mk. II, by Al N. Y.

printed in our September P.A. Mr. reports that his model has made up more than thirty excellent flights almost immediately after it was completed. Yes, he's mighty pleased with his ship.



Right: So successful were ad-

Douglas O-41A scale gas job (plans for which you'll find elsewhere in this issue) that designer Frank Roberts, of Jamesburg, N. J., rushed us this extra picture to show how gracefully the craft handles herself in the air. Right now, she's coming in for a slow, safe landing.

Right: Edouard Duval, of Calgary, Alberta, sends us this picture of his sister, Leontine Duval, holding the "Moth" which Ed built from plans in the August, 1937, Flying Aces. Says Ed, "The Moth" is a constant and stable flyer and I'm very well pleased with its performance."

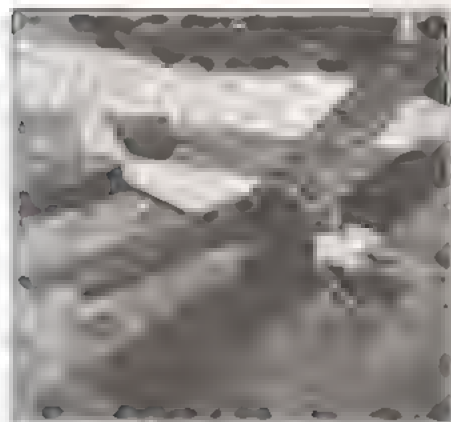


Below: You've already seen several model photos by Gordon Sullivan, of Lyndonville, N. Y., on this page. But even Gordon 'lowed' he was able to improve his work by following the hints in those photographic articles written by the Camera-Totin' Urquhart, recently printed in P.A. And here's a shot showing a Vought "Corsair," which Gordon sent along to prove that he HAS done a top-notch photographic job!

Above: Once more we hear from Pete Bowers, of Los Altos, Calif. Pete sends this snap of a model Newport 28, a super-detailed job with movable controls, standard equipment, such as guns and seats, and even glass-covered instruments in the



Right: And here's a contribution from still another chap who's crashed this page before Marcus Wear's Cumberland. Marc's job is a Newport 17. It has machine guns, movable controls, exhaust stacks, and a prop driven by an electrical rotary motor. And that's a mighty realistic-looking backdrop, too!



Built by Ed Tunis, of Paterson, N. J., this nifty gas ship was patterned after "Miss Philadelphia IV," which Maxwell Bassett described in P.A. for September, 1937. Right: Another job from P.A. plans (November, 1938) is this M.A.C. Fighter, built by Jack Brown, of East Palestine, Ohio. It boasts a scroll of miniature-detail features.



Make the

Heinkel 64-C Sportster

Comparatively unknown in the United States in the past, the Heinkel He. 64-C has long stood in the forefront among planes of its class in Europe. And now the design promises to prove popular on this side of the Atlantic, too. But here it will appeal to the modeler the most, for these plans show the ship to have everything an American modeler wants—clean lines, simple construction, and speed!

o o o

By Nick Limber

WHEN checking over plans of airplanes that were designed several years ago, one seldom comes across ships that can hold their own with the up-to-the-minute aircraft of today. In presenting this article on Germany's Heinkel He. 64-C, however, we are describing such a ship, one that you will go for in a big way.

Produced by the Ernst Heinkel Aircraft Corporation, the He. 64-C was built to the 1932 competition requirements of the Third International Touring Competition. Entered in this European contest, it was flown over 4,700 miles in three days, shattering all records for planes of its class at that time. Powered with a 150 h.p. Argus engine, the craft will reach a speed of 155 miles per hour, yet it lands at only 32. The He. 64-C is a twin-engine, dual control low wing monoplane of wooden construction.

The fuselage structure consists of bulkheads and longerons covered with three-ply sheets, in which special doors are provided to allow easy inspection of the interior. The engine mount of steel tubing is fastened to the first bulkhead, which is fireproof. Rubber buffers are fitted to reduce engine vibrations.

The 64-C has folding wings, which are designed to operate by a single lever. To "brake" the ship down for landing, its wings are fitted with automatic slots coupled to trailing edge flaps.

The tail unit, similar to the wing and fuselage, is entirely of wood. It, too, is covered with three-ply.

The controls are operated in the usual manner; that is, by stick and rudder bar.

Streamlined braces strengthen the landing gear. A



Ready for final assembly are these completed parts of the Heinkel model sportster. Note how few pieces are needed. And that fuselage is a cinch—for it's easily shaped from solid blocks of balsa.

combination oleo-pneumatic shock absorber is used, and the wheels are equipped with brakes operated by a hand lever.

Although the craft is tremendously popular with the European sportsman pilot, its sleek lines will make it even more so with American model builders. In spite of its simplicity, however, much time and effort will be saved if a careful study of the plans is made before actual work is started on the model.

FUSELAGE CONSTRUCTION

SINCE our model is primarily designed for speed, the fuselage is built of balsa for strength and safety.

Two medium soft blocks, each $1\frac{3}{4}$ " by $\frac{3}{4}$ " by $12\frac{1}{4}$ " in size, form the fuselage. Trace the side and top views on each half and trim the excess balsa away. A knife and sandpaper are the only help required for this task.

To check the sides, make cardboard templates from the blacked-in sections on Plates A and C. Hold them in the indicated positions on the fuselage sides, and when the sides have been shaped so that the templates fit flush, the correct curve has been obtained.

With a chisel scoop out the excess balsa from the body. Use sandpaper to complete the task, reducing the wall thickness to about $1/16$ ".

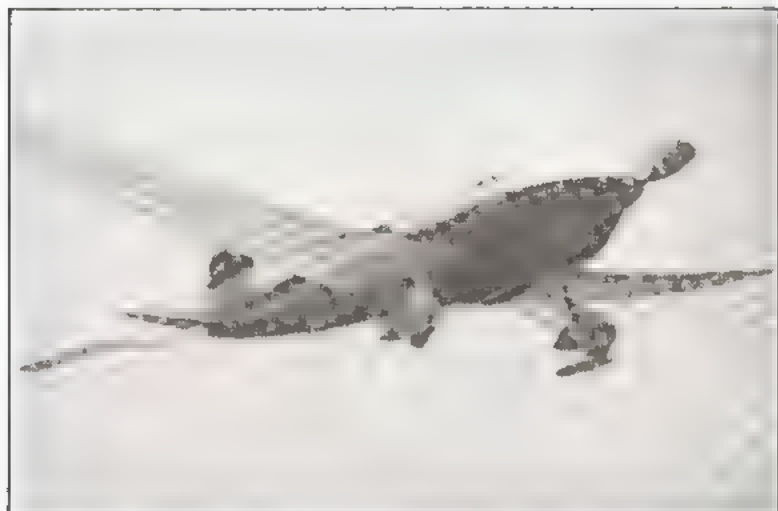
Construction of the fuselage is complete when the two halves have been cemented together.

Making the turtleback or headrest comes next. Refer to Sections F to I on Plate C for the correct shape. To make the piece, follow the same procedure as in the fuselage. Carve it from a soft balsa block $\frac{3}{4}$ " by $\frac{5}{8}$ " by $7\frac{1}{4}$ ", and finish it with sandpaper. If a chisel is not available to hollow out the part, merely sandpaper the bottom surface as shown by the dashed lines on the sections. Cement turtleback to the fuselage and allow to dry.

The construction of the nose block, from two pieces of balsa each $\frac{3}{4}$ " by $1\frac{3}{4}$ " by $2\frac{1}{2}$ ", is also similar to that of the fuselage and turtleback.

When each half has been finished, both inside and out, join the two together and then cement the unit to the fuselage. The block is attached to the fuselage at the station for Template A.

Detail may be added to the body if $1/32$ " grooves are cut along the nose of the craft as indicated on Plate A. Bamboo strips form the narrow panels on each side of the cockpits.



Left: Unusually interesting is this front-quarter view of the He. 64-C, because, while the model was resting on a white-covered table when the shot was snapped, it now appears to be in flight. Besides being of value to modelers in assembling their models, therefore, the picture affords a good example of what can be accomplished by experimenting with various backgrounds and bases for filmographic attempts. (In general, though, we advise a background that contrasts with the model).

TAIL SURFACE CONSTRUCTION
COMplete PLANS for the tail assembly will be found on Plate C. Note that the tail is built mainly from strips of 1/16" sq. balsa, and bamboo. The base of the stationary part of the rudder is made from 1/16" sheet, patterned as in the plan.

After cementing each strip of balsa in place on the spar, allow sufficient time for the cement to harden before forming the edges of the unit. It is a good idea to place a heavy, flat object on top of the assembly while drying, to prevent warping.

Thin strips of bamboo form the outline of each tail part. Pins pushed into the work-board along the outside of the bamboo edge will hold the correct shape and prevent the bamboo from slipping while cement hardens. The unit is covered with tissue.

BUILDING THE WING
DRAWINGS of the wing structure are found on Plate D. The ribs should be traced onto a sheet of 1/16" balsa. Cut them out and finish off with smooth sandpaper. The openings for the spars are cut out with a razor blade or sharp knife.

The spars are made of 1/4" by 3/32" hard balsa strips and tapered to accommodate each rib.

Lay the spar over the plan of the wing and mark off the points at which each rib is located. Then cement each rib in place and allow the cement to harden before attaching the leading and trailing edges.

The leading edge is made of 1/16" by 1/8" strip balsa. Cement it to the nose of the ribs and cover with 1/32" sheet. The trailing edge is made of 1/16" by 1/8" and cemented as indicated on the plan.

Note that all length measurements for wing-stock may be taken directly from the drawing.

Trace the outlines for the three pieces forming the wing tip onto 1/4" sheet balsa. Cut them out and finish off according to Sections Y-Y and W-W. A panel sheet of 1/32" balsa is cemented to the bottom of the wing between Ribs 1 and 2.

As shown on the plans, the wing halves are not attached directly to the fuselage but to fillets, the shape of which can be taken from plate B. The side view corresponds with Rib No. 1. Carve the fillets from a medium hard piece of balsa 1/2" sq. by 4 1/8". Make sure that the correct curvature is given in order that the fillet fits neatly against the fuselage. This curve is shown on Sections "a-a," "b-b" and "c-c" on Plate B.

When the fillets have been completed, cement them to the fuselage where they can dry firmly while the wing is being covered. If the fillets have been shaped exactly as shown, the correct angle of dihedral 1/16" will be given.

After the wing has been glued in place and the dihedral checked, the landing gear should be next in line. The landing gear struts are made of balsa

Right: Nick Lamber was particularly pleased with this photo of his Heinkel model, since it shows the various details so well, especially the markings. The wings of Nick's job are painted yellow, while the fuselage is light green. The swastikas are black on white, the emblem on the rudder being superimposed on a red band.

BILL OF MATERIALS

(Complete plans will be found on the following pages)

Two pieces medium hard balsa 1 1/2" by 3/4" by 12 1/4" for fuselage;
 One piece soft balsa 3/4" by 3/4" by 7 1/4" for turtleback;
 Two pieces hard balsa 3/4" by 1 3/4" by 2 1/2" for nose block;
 Two strips 1/16" sq. balsa for tail unit;
 One sheet 1/16" balsa for ribs;
 One sheet 1/32" balsa for panel and leading edge cover;
 Two strips hard balsa 1/4" by 3/32" for spars;
 Two strips balsa 1/16" by 1/8" for leading and trailing edges;
 One sheet 1/4" balsa for wing tips and tail plug;
 Two pieces balsa 1/2" by 1/2" by 4 1/8" for fillets;
 One sheet 1/8" balsa for landing gear;
 One piece balsa 2 1/2" by 3/8" by 3/8" for landing strut streamliner;
 One piece 3/8" stock for nose plug;
 One piece 1" by 1/2" by 5" hard balsa for prop;
 Music wire (No. 14), celluloid, bamboo strips, tissue, cement, wheels, paint, and dope.

and bamboo—the latter being used for Strut L. Plate D shows the struts full size. Two of them are made from 1/8" hard sheet balsa.

The wheel pants (See Plates A and B) consist of three pieces of sheet balsa. The outer pieces are carved from 1/8" sheet while the center is of 1/4". Note that the center piece houses the wheel and shock absorbing attachment. The streamliner to which Strut K is fastened is carved from a piece of medium hard balsa 2 1/2" long by 3/8" sq. Cement this in.

The tail plug is made of 1/4" hard sheet balsa. The nose plug is cut from 3/8" stock.

A block of hard balsa 1" by 1/2" by 5" is used for the propeller. Use a sharp knife and sandpaper. In carving the blades of the prop, refer constantly to the drawing on Plate 4. Make the propeller spinner at the same time. A spinner tip is added after the prop shaft has been bent to shape.

The prop shaft and all other wire parts for the model are made of No. 14 music wire.

ASSEMBLING AND PAINTING

WITH the wing already attached to the fuselage, we need only assemble the tail and landing gear unit and the job is practically done. Care must be taken to line up the parts correctly. Make constant use of the drawings and this task will be simplified.

The builder himself can best decide as to color of paint and the number of coats to apply. A well-constructed job with just a couple of coats will look better than a poorly-made model with a dozen coats.

The fuselage of our original He. 64-C is painted a light green, while the wings, tail unit, and wheel pants are yellow. Landing gear and tail-skid struts are painted black. The propeller blades are silver and the spinner is yellow. The word "HEINKEL" is lettered in white.

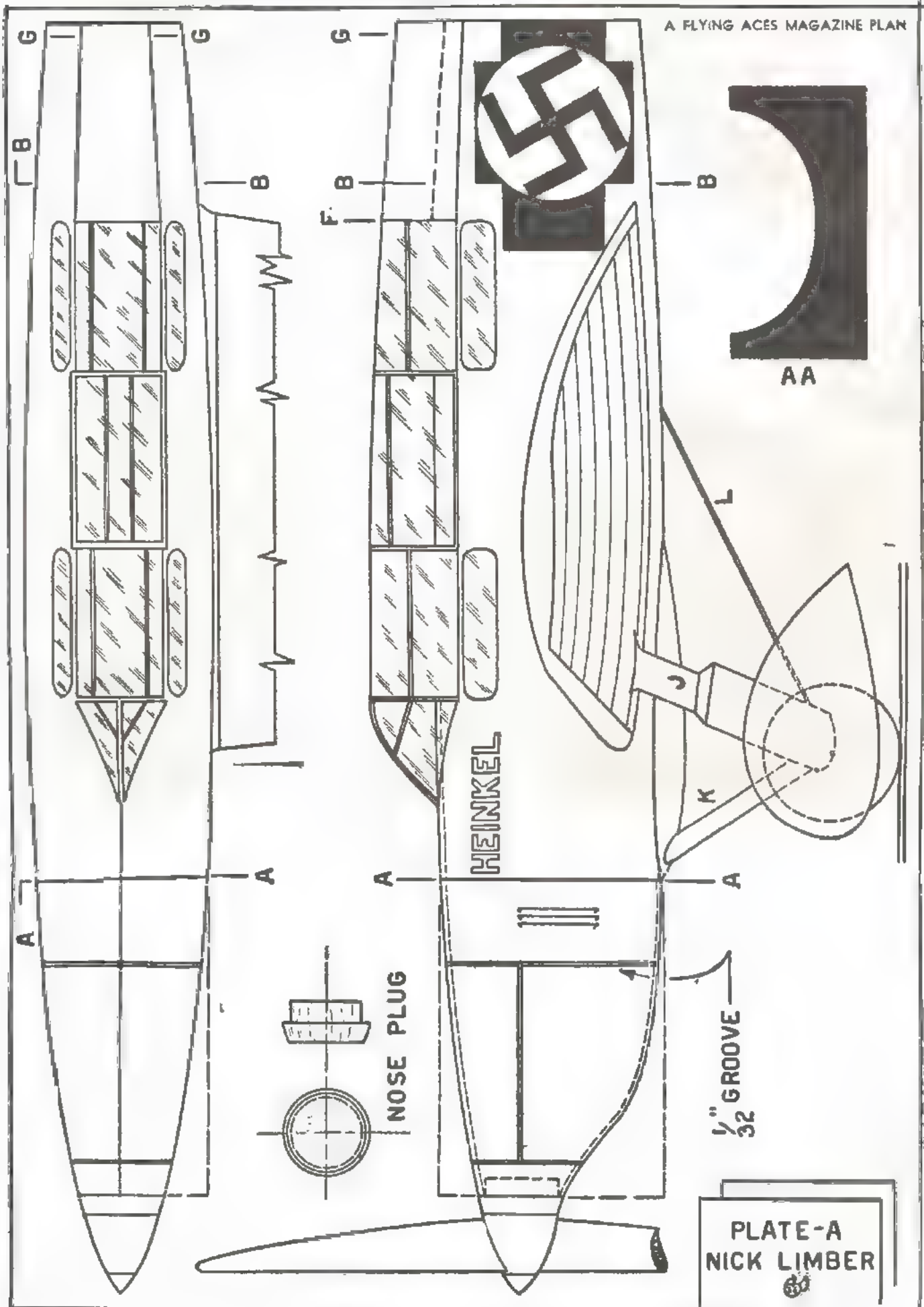
The insignia and lettering on the fuselage sides are reproduced in black and white as shown on the plan. Details for the stabilizer coloring will be found on Plate C. The Nazi insignia on the rudder is a black swastika in a white circle and white on a red band, which last is indicated by the dashed lines on the plan (Plate C). The bamboo strips supporting the tail surfaces are painted silver.

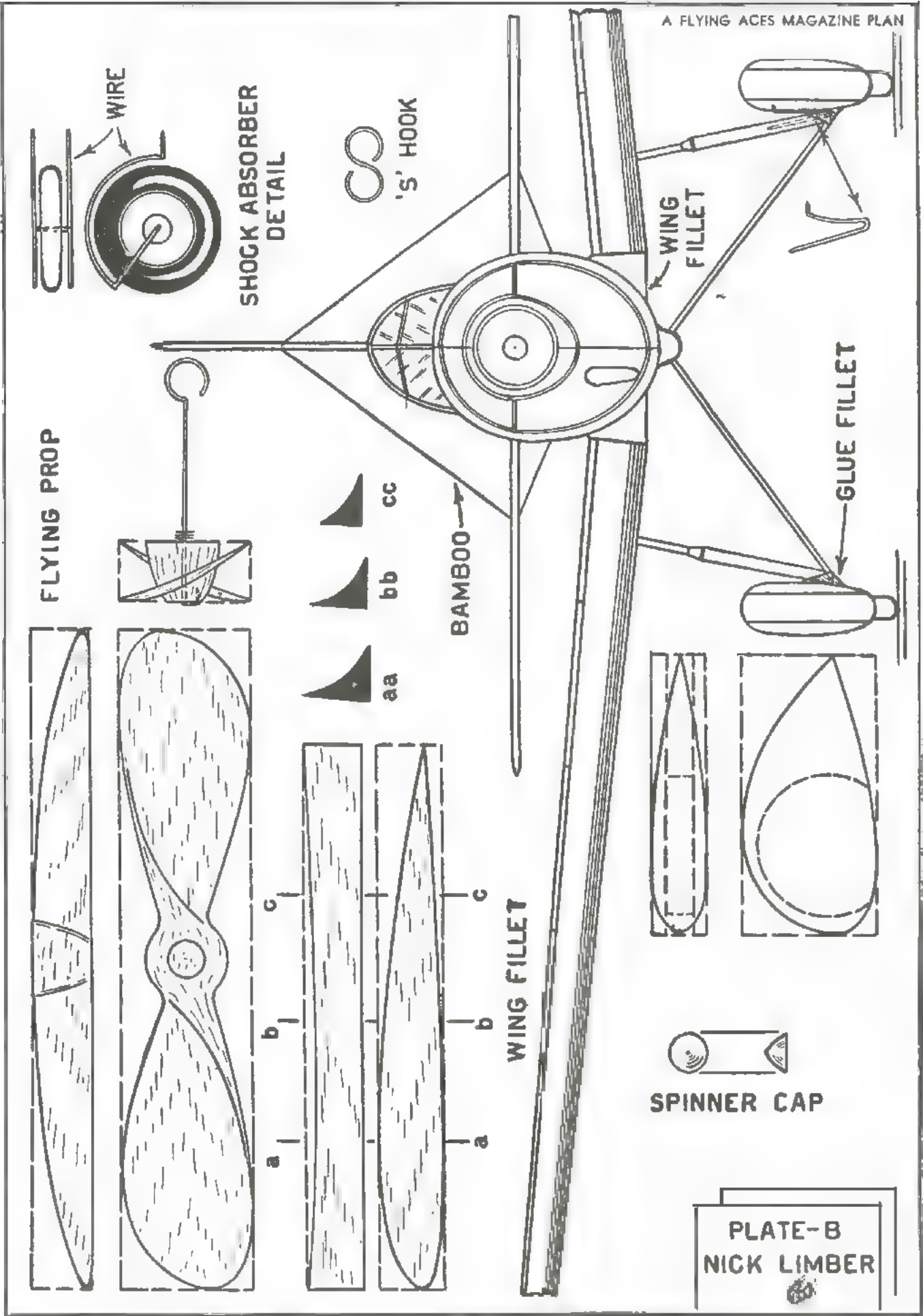
For flying purposes, use six strands of 1/8" flat brown rubber. Test-glide and balance the ship correctly before flying it under power.

Powered flights should begin with the nose of the craft pointed into the wind. Careful inspection should follow each flight—as a safety measure.



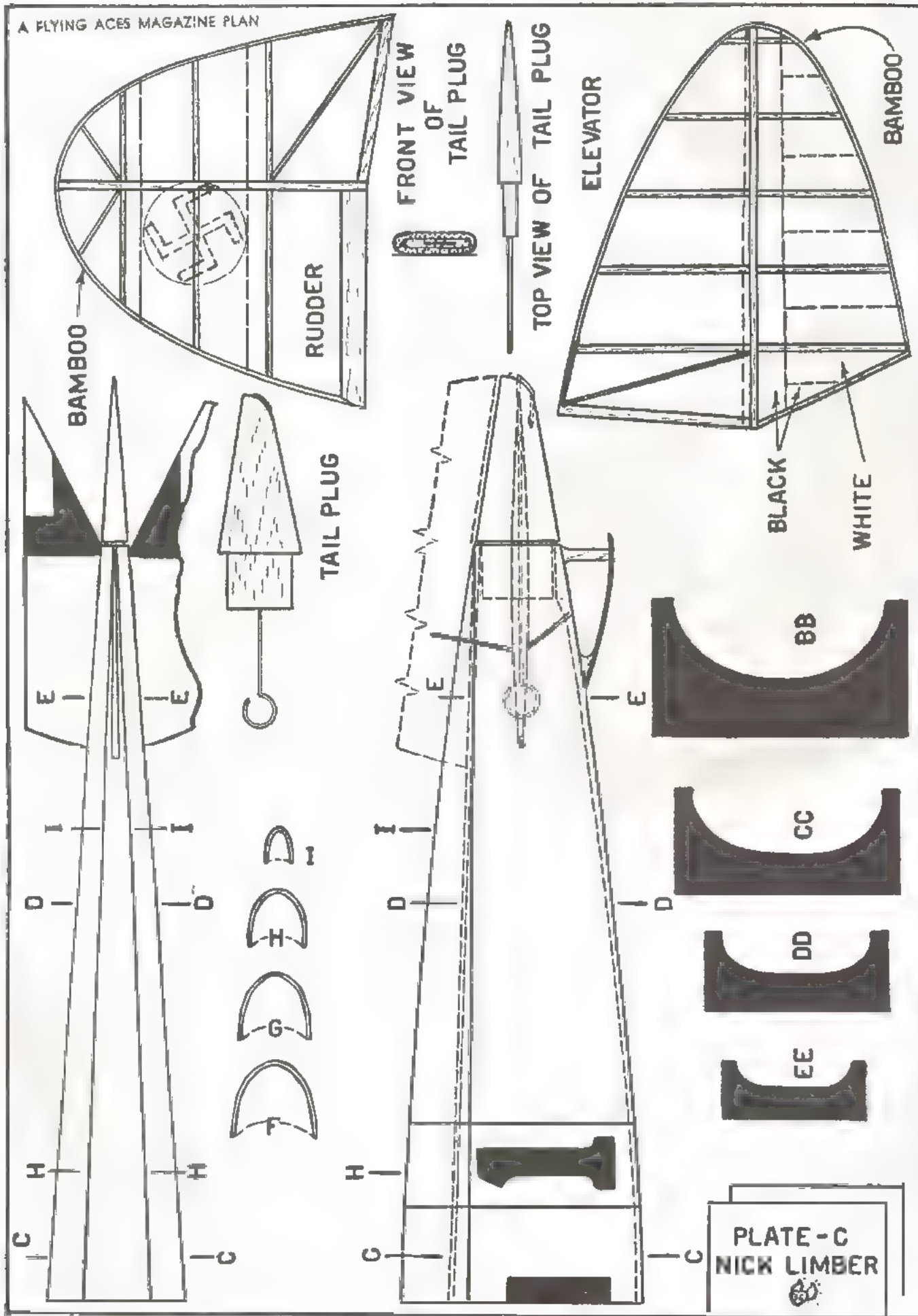
MAKE THE HEINKEL 64-C SPORTSTER—Plate A





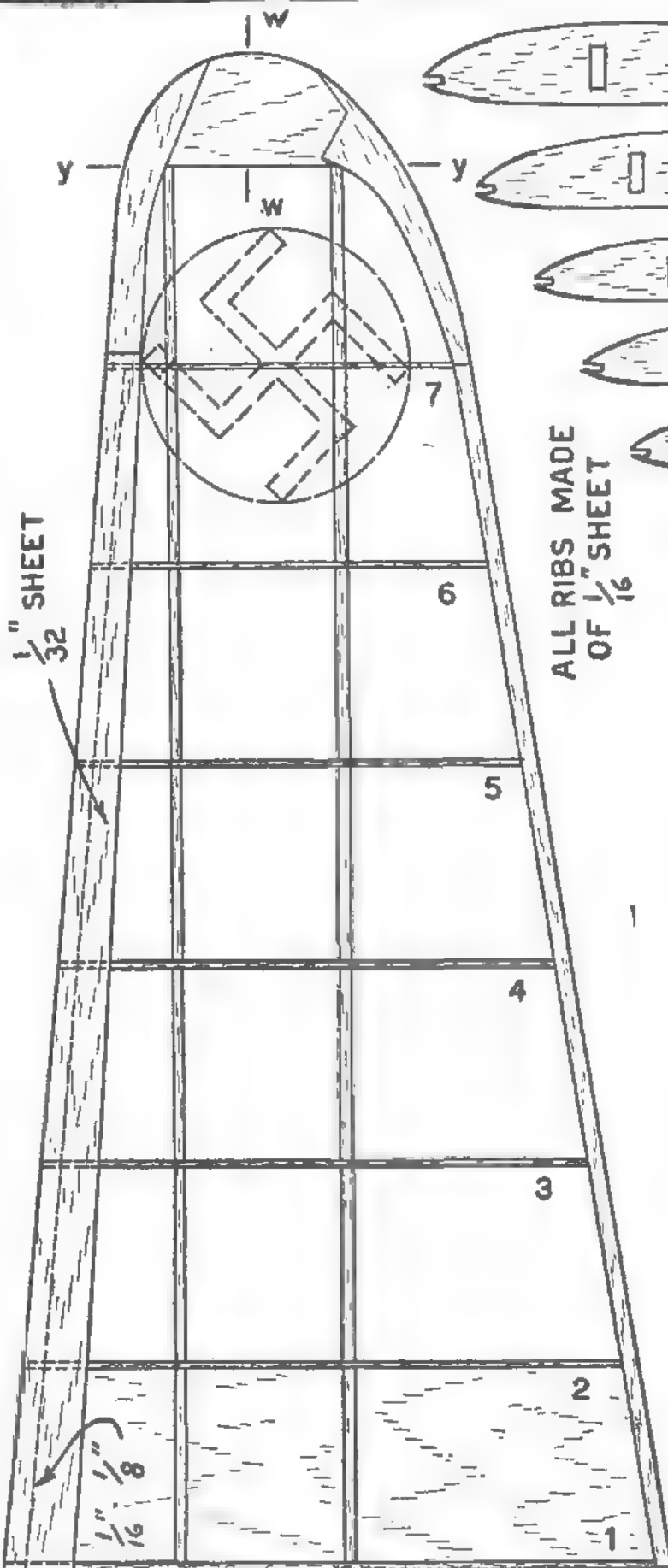
MAKE THE HEINKEL 64-C SPORTSTER—Plate C

A FLYING ACES MAGAZINE PLAN

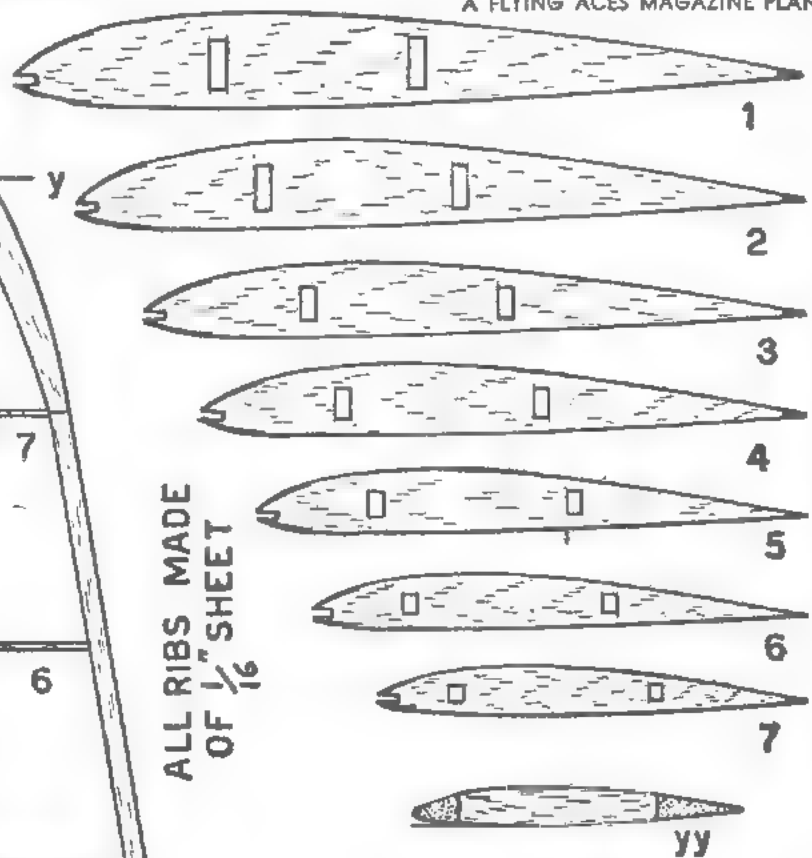


MAKE THE HEINKEL 64-C SPORTSTER—Plate D

A FLYING ACES MAGAZINE PLAN



ALL RIBS MADE
OF 1/16" SHEET



STRUTS MADE OF
HARD BALSA

PLATE-D
NICK LIMBER



Sort of a "camera hog," this model, wouldn't you say? See how she's climbed almost into our Kodak! Anyhow, it gives us a chance to check the wing-mounting arrangement.



Fly This

Golliwopper Tripe

By Alan Orthof and Louis Milowitz

ZOWIE! How's *that* for a tongue-twisting title for our latest attempt? We've had the name in mind for some little time, but this is the first model we've produced that really seemed to rate it. So here she is—the *Golliwopper Tripe*!

Her span is 12", and the ship is really a swell performer. And despite the fact that she's a "tripe," her construction is quite simple, and the average modeler can turn out her "twin" in just about three hours (not counting time out for supper or trips down to the dealer for forgotten supplies, of course).

On the *G.T.*'s first flights, she had a little stalling temperament for us to bother with. But this has been ironed out now, and she steadily turns out stable flights seldom running less than 30 seconds each.

As the photographs plainly show, the model is an all-balsa affair. Even the wings are of sheet balsa, thus disposing of the job of cutting ribs or other airfoil necessities. So let's start work—and the first item on our program is the

MOTOR STICK

A RATHER HARD piece of strip balsa $\frac{1}{8}$ " sq by 8" is used for the stick. Bevel the ends as shown on the plan, then glue a small thrust-bearing to the nose. Don't be tight with the cement (but see that the cement is tight on the balsa—heh heh!) Bend the rear hook

from .014 wire and glue it into the stick as indicated.

The tail boom is made of the same stock as the motor stick and is tapered to $\frac{1}{32}$ " thickness at the rear. The boom fair into the rudder.

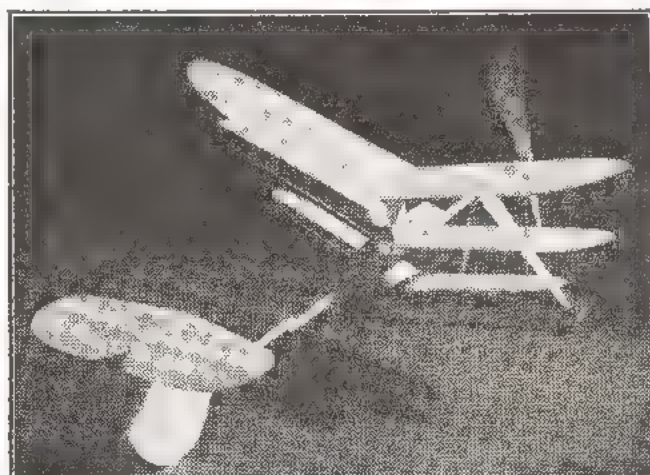
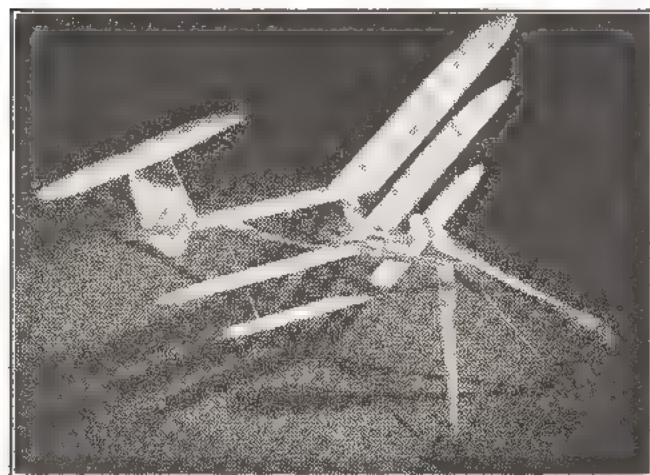
The landing gear has two single struts each cut from $\frac{1}{32}$ " sheet balsa. They are $3\frac{3}{4}$ " long and taper from $\frac{1}{2}$ " wide at the top to $\frac{1}{8}$ " at the ends. Use wood of a "stringy" grain, since this will help the shock-absorbing qualities of the struts. It is not necessary to streamline the pieces other than to round off the front edges slightly. Be sure to make especially good joints where the struts meet the motor stick.

The axles are made from .014 wire bent as shown on the plan. Bend the wire into the struts to insure good joints.

The wheels are $\frac{1}{8}$ " in diameter and are made from $\frac{3}{32}$ " sheet. Round off the edges. To make the wheels more life-like, give them a coat of dark-colored dope and then glue a white paper disk about $\frac{1}{4}$ " in diameter to both sides. A drop of glue at the end of each axle will hold the wheels in place.

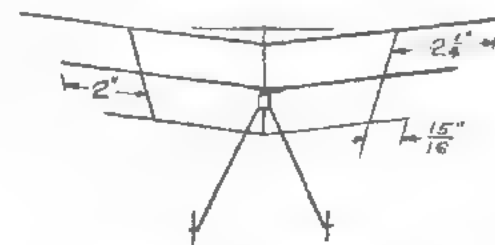
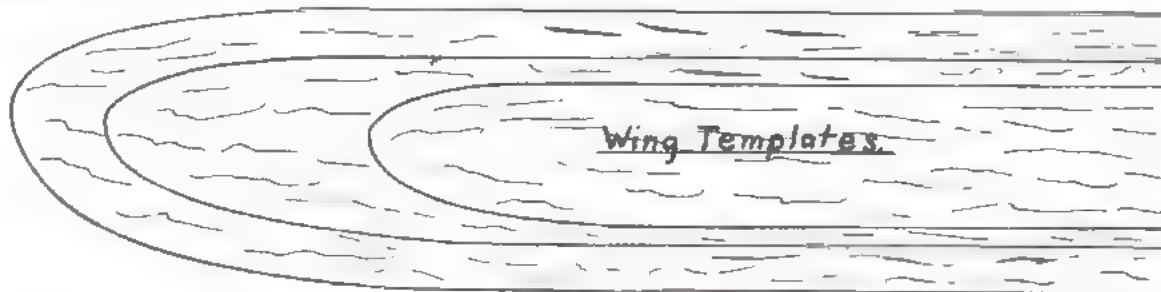
WING AND TAIL SURFACES

THESE surfaces are made of $\frac{1}{32}$ " sheet balsa. The outlines may be traced onto the wood directly from the plans. After the stock has been cut to outline shape, (Continued on page 79)



*Way down in our secret hearts (Oh yes, editors do have hearts!) we suspect that the Orthof-Milowitz combination has a little Phineas Pinkham blood in its veins. For this model is the type of device that P.P. would probably develop as a flight-aid for the south-bound mallows—or sump'n! Plenty of roosting room on those three wings, so to speak! But in spite of the model's seemingly complicated construction, a fairly good modeler could build one, exactly as shown in these pictures, in three-four hours or so.

A FLYING ACES MAGAZINE PLAN



Prop Block $\frac{1}{16} \times \frac{1}{2} \times 6$.

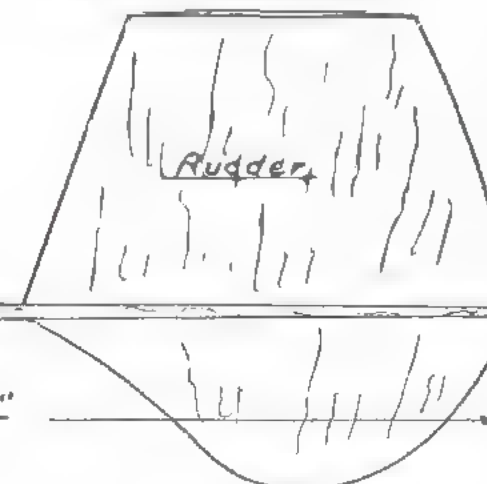
$\frac{1}{32}$ sq. Bamboo

$\frac{1}{32}$ sht.

Bearing.

$\frac{1}{8}$ sq.

Wing Mount.



8"

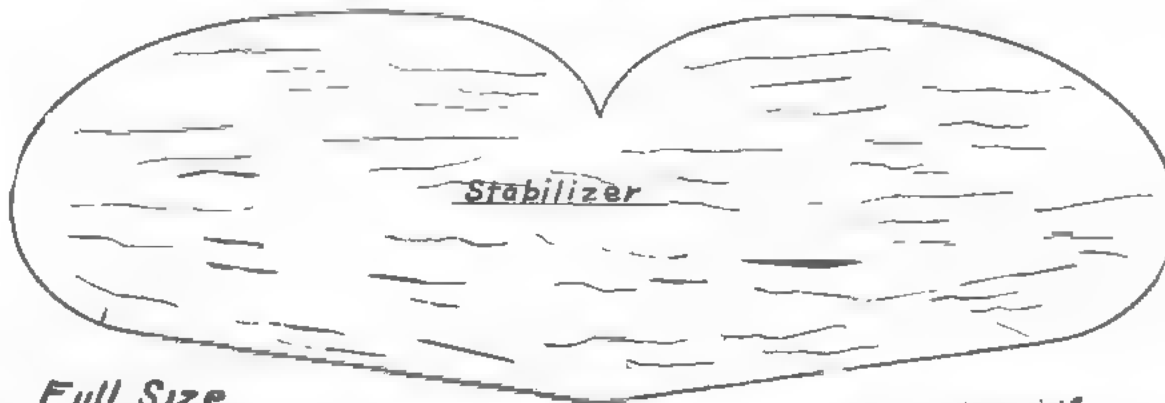
$4 \frac{1}{2}$ "

Struts shown in full length.

$\frac{1}{32}$ sht.

$3 \frac{5}{8}$ "

$\frac{7}{8}$ Dia.



Shaft

└ Axle

└ Rear Hook.

*0/4 Wire.

Plans Full Size.

All surfaces $\frac{1}{32}$ sht.



Construct Our Gas-Powered

Douglas O-41A

By Frank Roberts

GULL-WING observation planes built by Douglas have been used by the Army in several different models and types. Some have had wire-braced wings, some are strut-braced. Radial engines have been installed in many of the models, and the in-line power plants have been used in others.

The Douglas O-41A is one of the later types, strut braced and powered with an in-line engine. Because of its fine flight characteristics it lends itself very willingly to reproduction in reduced scale as a gas-powered model. The original ship has a wing-span of about 45 feet and a fuselage length of 40 feet. Thus the fuselage is quite long for the span, and this feature adds definitely to the stability of a model.

Our flying scale model, which except for very minor changes accurately follows the big ship's scale, has a span of $49\frac{7}{8}$ inches, a length of $36\frac{3}{4}$ inches, and weighs but one pound and seven ounces.

It was designed to fly with any of the standard miniature motors. The drawings show the installations for the *Synco Bee* and the *Trojan Junior*. The bases for these engines differ slightly, and since they are generally representative of the small motor field they can be used as guides for the fitting of any other motors in the group.

While building models from these plans and instructions, some sharp-eyed modeler may note slight differences between the plans and the accompanying photographs. The reason is that the model as shown in the picture was built from *working* drawings, then tested and photographed. Finally the finished drawings for *FLYING ACES'* reproduction were prepared to include any changes indicated by the tests. The rule, therefore, is to follow the photographs for general reference and the drawings for accuracy.

The model is surprisingly easy to build, and any modeler of fair experience should have no trouble. Remember that most sections of the model are covered in the plans in three different ways—top, sides, and front. Therefore if you don't see what you need on one plate, refer to one of the others and you'll find the answer.

Formers and ribs are given in full size on Plates 3 and 4 respectively. Other features are of necessity

Good news, modelers! Here comes another nifty gas job by Frank Roberts, who prepared that fine Fairchild 24 printed in last February's F.A. This time, Frank gives you an excellent scale model of the Army's Douglas O-41A gull-wing observation plane. Except for minor changes, the model follows the strict scale of the big ship—and it's a sure-fire flyer! So now — take it away!

reduced and must be enlarged to twice their size. Of course, only the outlines actually needed in shaping need be enlarged. To build the wing, for instance, the only "blow up" needed is the main outline on Plate 6.

When the enlargements have been made, fasten the sheets down to a suitable work-board or table top on which they can safely be left between working periods. Cover them with heavy waxed paper to protect them from cement, for much of the assembly work is done directly over the drawing.

And now if you'll take the Bill of Materials down to your nearest dealer and get the necessary supplies, you'll be all set to start work.

CONSTRUCTION OF WING

SINCE it's a good idea to do the hardest work first, I like to begin with the wing. The ribs may be traced directly from the plate onto the $3/32$ " sheet by means of carbon paper, or the patterns may be traced and cemented to light cardboard and then cut out for use as templates.

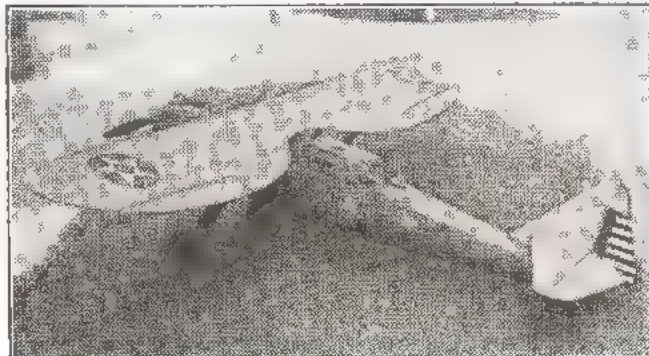
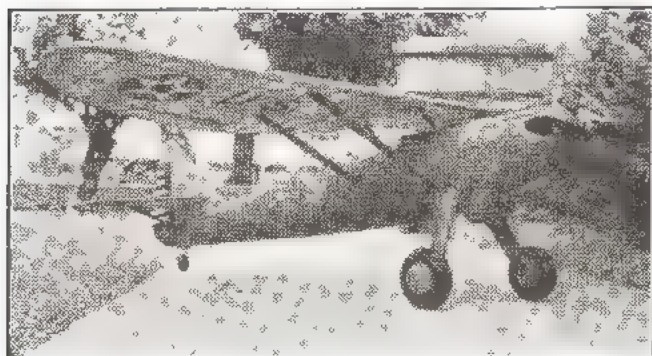
The ribs are of accurate Clark Y section. Care should be taken to cut them accurately, cutting the notches to the exact depths indicated.

The trailing edge is cut from $1/8$ " by 2" sheet and the tips from $1/2$ " sheet. Spars are made from $1/8$ " by $1/2$ " and are pinned directly over wing drawing. The ribs are lined up on the spars before cementing them in place. Accurately cut, the notches in the ribs automatically give the wing the correct taper (when viewed from the front). Any slight adjustment in the ribs should be made now.

Trailing and leading edges can be installed as soon as the ribs have been cemented to the spars. Spars are trimmed flush with the bottom of the ribs after the wing is assembled.

After the wing is dry, cut in the ailerons and cement the aileron spars in place. Spars and leading edges are joined at No. 3 rib. Do *not* cement these joints until the wing has been assembled and the proper dihedral is given the wing. Note the brace blocks on each side of the spars.

See the front view on Plate 5 for dihedral angle. The amount given is only the scale amount, which I believe to be enough. However, some modelers may prefer to



Above left: Some people claim you can't tell whether a ship'll fly just by looking at it. But in this Douglas O-41A scale model, every line seems to be shouting out loud that this craft *WILL* fly. In fact, she seems right now to be tensing for a sudden hop in to the ozone even without the help of her motor! Right: The graceful gull wing of this stable and dependable flyer is shown clearly in this picture, together with details of the assembly and the cockpit. The insignia, by the way, is that of the 32nd Observation Squadron, Air Corps, of Brooks Field, Texas.

Bill of Materials

(Complete plans will be found on the following pages)

All wood is hard balsa unless otherwise noted

Six pieces $\frac{1}{4}$ " by $\frac{1}{4}$ " by 24" for wing spars;
Two pieces $\frac{3}{32}$ " by 3" by 24" for wing ribs;
Two pieces $\frac{1}{8}$ " by $\frac{1}{8}$ " by 24" for leading edge of wing;
One piece $\frac{1}{8}$ " by 2" by 24" for trailing edge, etc;
One piece $\frac{1}{2}$ " by 2" by 18" for wing tips;
One piece $\frac{1}{4}$ " sq. by 36" for leading edges, tail;
One piece $\frac{1}{8}$ " by $\frac{3}{16}$ " by 18" for trailing edges, tail;
Three pieces $\frac{1}{8}$ " by $\frac{3}{8}$ " by 18" for tail spars;
One piece $\frac{3}{32}$ " by 3" by 18" for formers;
One piece $\frac{1}{2}$ " by 3" by 4" plywood for No. 1 former;
Eight pieces $\frac{3}{16}$ " sq. by 36" for main frame;
Thirty pieces $\frac{1}{16}$ " by $\frac{3}{16}$ " by 36" for fuselage stringers;
One piece $\frac{3}{4}$ " by 3" by $3\frac{1}{4}$ " for motor cover cowl;
One piece $\frac{1}{32}$ " by 2" by 6" for radiator sheet wrapping;
Two pieces $\frac{1}{4}$ " by $\frac{5}{8}$ " by 24" for wing struts;
One piece $\frac{3}{16}$ " by $\frac{3}{8}$ " by 12" for center-section struts;
One piece $\frac{3}{4}$ " by 3" by 4" for nose block;
One piece $1\frac{1}{4}$ " by $1\frac{1}{2}$ " by 6" for radiator block;

One piece $1\frac{1}{2}$ " by $1\frac{1}{4}$ " by $2\frac{1}{4}$ " for fuselage end block;
One piece $\frac{3}{8}$ " by 1" by $2\frac{3}{4}$ " for fuselage end block;
One piece $\frac{1}{16}$ " by 3" by 18" for cockpit cover;
One piece $\frac{1}{8}$ " by 3" by 24" for landing gear struts;
One piece $\frac{3}{32}$ " dia. music wire, 36" long for landing gear;
One pair $3\frac{1}{2}$ " Marpell "Superior" wheels;
One $1\frac{1}{2}$ " Marpell tailwheel;
One Austin-Craft flight timer;
One Austin-Craft battery holder;
One-half pint model cement;
One-half pint paper cement;
Four oz. yellow dope;
Four oz. blue dope;
One and a half yards of silk 36" wide;
Two feet soft iron wire;
Two feet 20 gauge music wire for wing strut braces;
One piece $\frac{1}{4}$ " by $\frac{1}{2}$ " by 8" Pine for motor base;
Pins, sandpaper, good workboard, etc.

increase the angle according to their own ideas.

The leading and trailing edges and spars should now be trimmed down to a neat streamlined finish and taper. Use a block of wood, say 1" by 3" by 12" wrapped with fine sandpaper. Finally, cover the wing with silk or heavy tissue. Silk is not only the easiest to use, but it is the strongest of all coverings, too.

TAIL SURFACES

THE tail spars may be tapered before the ribs are cemented in place. However, I prefer to build the tail units with the spars as wide as the widest part of the structure (center rib on stabilizer, bottom rib on fin), and all the tapering done with woodplane and sandpaper after assembly.

Hinges for the tail—and also for the wing ailerons—are short pieces of soft iron wire. Insert them at the center line of the spar and cement them at each rib (refer again to Plate 6).

Insert the stabilizer into the fin before hinging the two elevators onto the stabilizer.

FUSELAGE

ON Plates 1 and 2 you'll find the main frame of the fuselage indicated on the side and top views by shaded lines. This frame—with its uprights, cross-pieces, and diagonal braces—forms the box-like skeleton on which the formers are cemented. It takes all the strain of motor, landing gear, and struts.

The main frame is built of $\frac{3}{16}$ " square hard balsa. Build two sides exactly alike. Complete the frame by cementing the top and bottom crosspieces in place, starting at Station No. 2 and working toward the rear. Rubber bands and pins are used to hold the sides together while the cross-pieces are being cemented in place.

No. 1 former is cut from $\frac{1}{8}$ " plywood and cemented in place first. If you intend to use a motor other than either of the two mentioned, you will have to change the motor bearer notches to suit.

Check the frame for squareness and true curve of each side. Any irregularities may be taken out by holding the frame in the steam from a kettle for a few minutes and

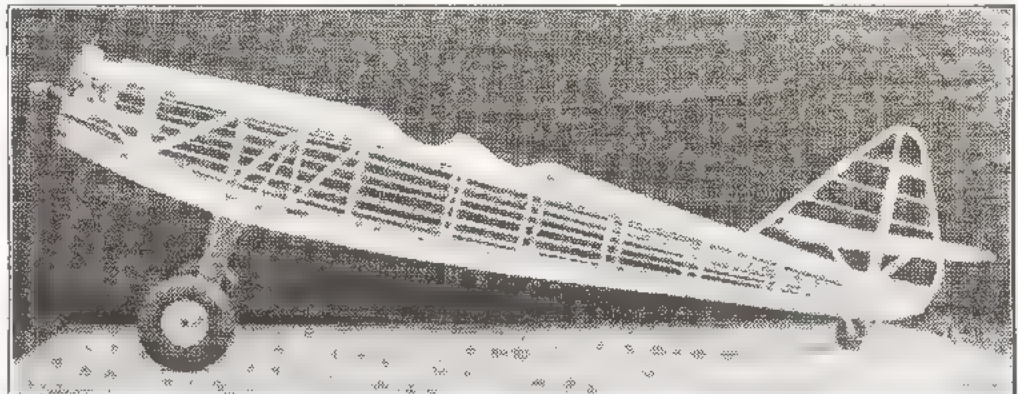
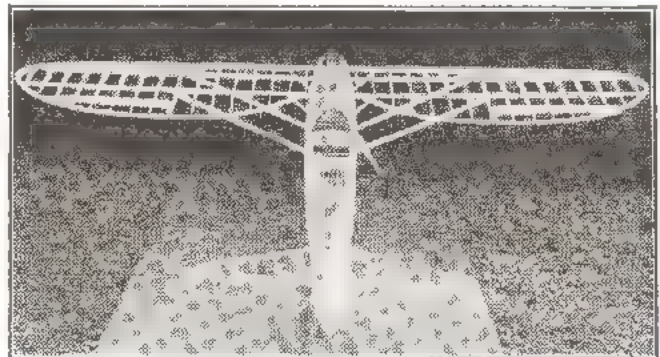
then blocking the frame in the correct shape and allowing it to dry.

Make and install the landing gear at this time. Music wire of $\frac{3}{32}$ " diam. forms the basis; bend it as shown by the sketch on Plate 5. The joints are bound with soft wire and soldered. The assembly is cemented to the fuselage frame and cross-braces, then wrapped with thread and given a second coat of cement.

The $\frac{3}{8}$ " wood is cut to the shape of the pattern and each piece is grooved $\frac{3}{64}$ " for the wire. The strut halves are cemented together with the wire sandwiched between them. The wooden part of strut is not cemented to the fuselage or wing strut. Instead, a slight space is left clear to allow the gear to flex for landings.

The former patterns are used in somewhat the same manner as the wing rib patterns. Do not cut out the notches at this time, but mark the places where they should come. As the formers are cut out, they may be cemented in place on the top, bottom, and sides of the fuselage frame. When the formers are all in place the stringer notches may be cut; a piece of fine hacksaw blade answers very well for this job.

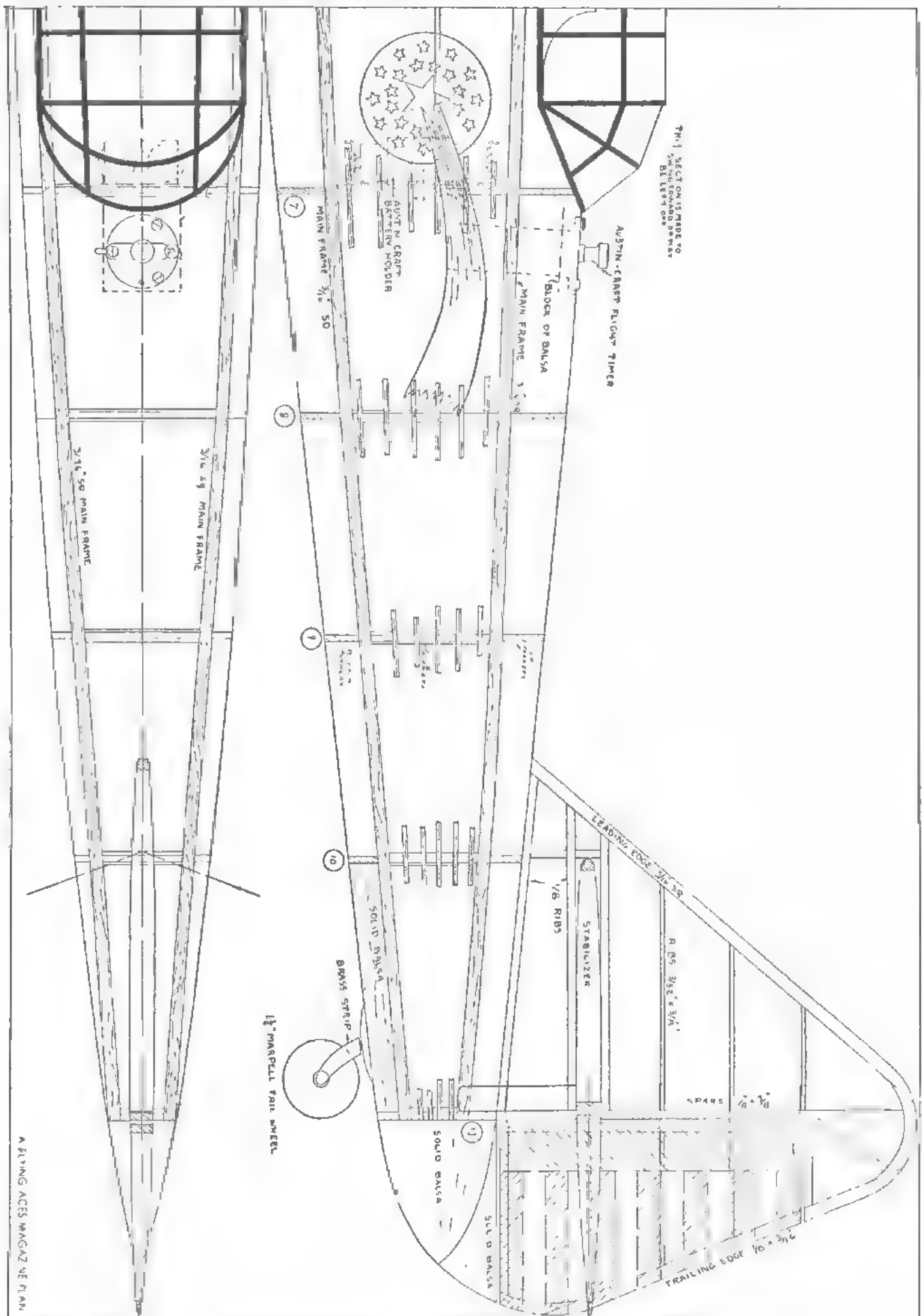
Check the frame again for squareness and accuracy,
(Continued on page 64)



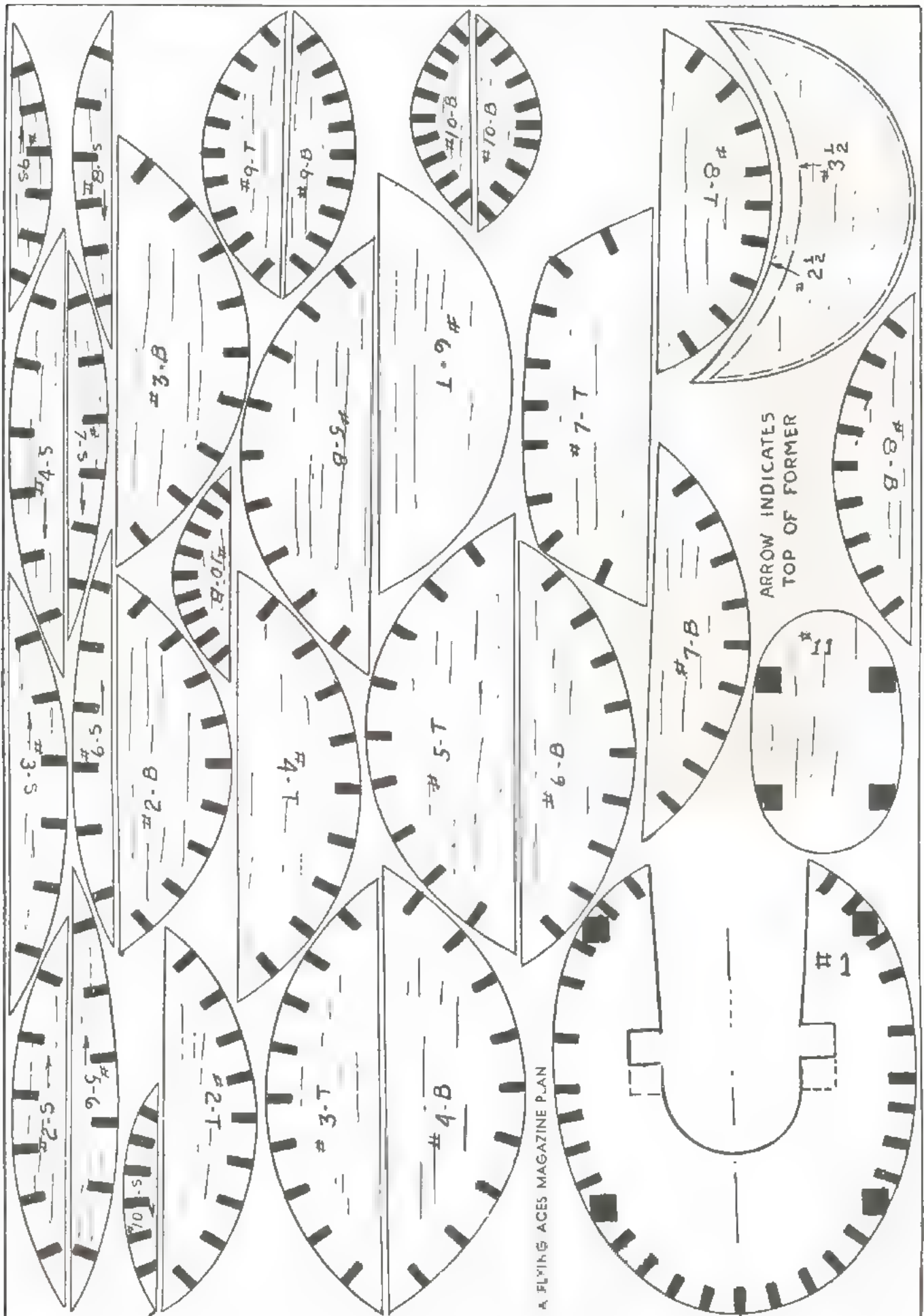
Right, is she a honey—or isn't she? Even a casual glance at these two shots of the O-41A model framework would quickly convince a sceptic that she most certainly IS! In the upper picture, the uncovered skeleton is shown completely assembled so you can see how the various structural features blend. The bottom snap illustrates the sturdiness of the model's fuselage.

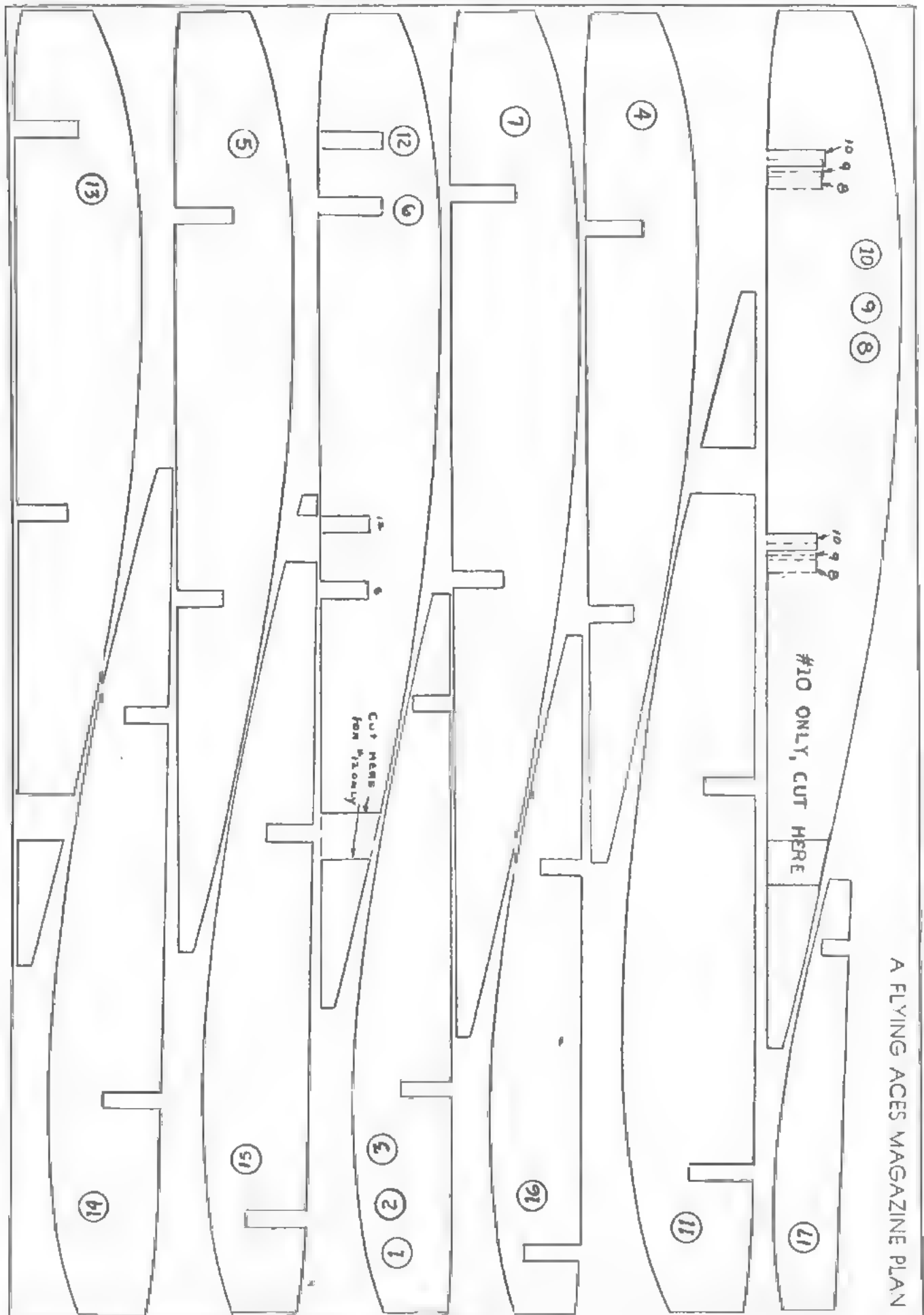
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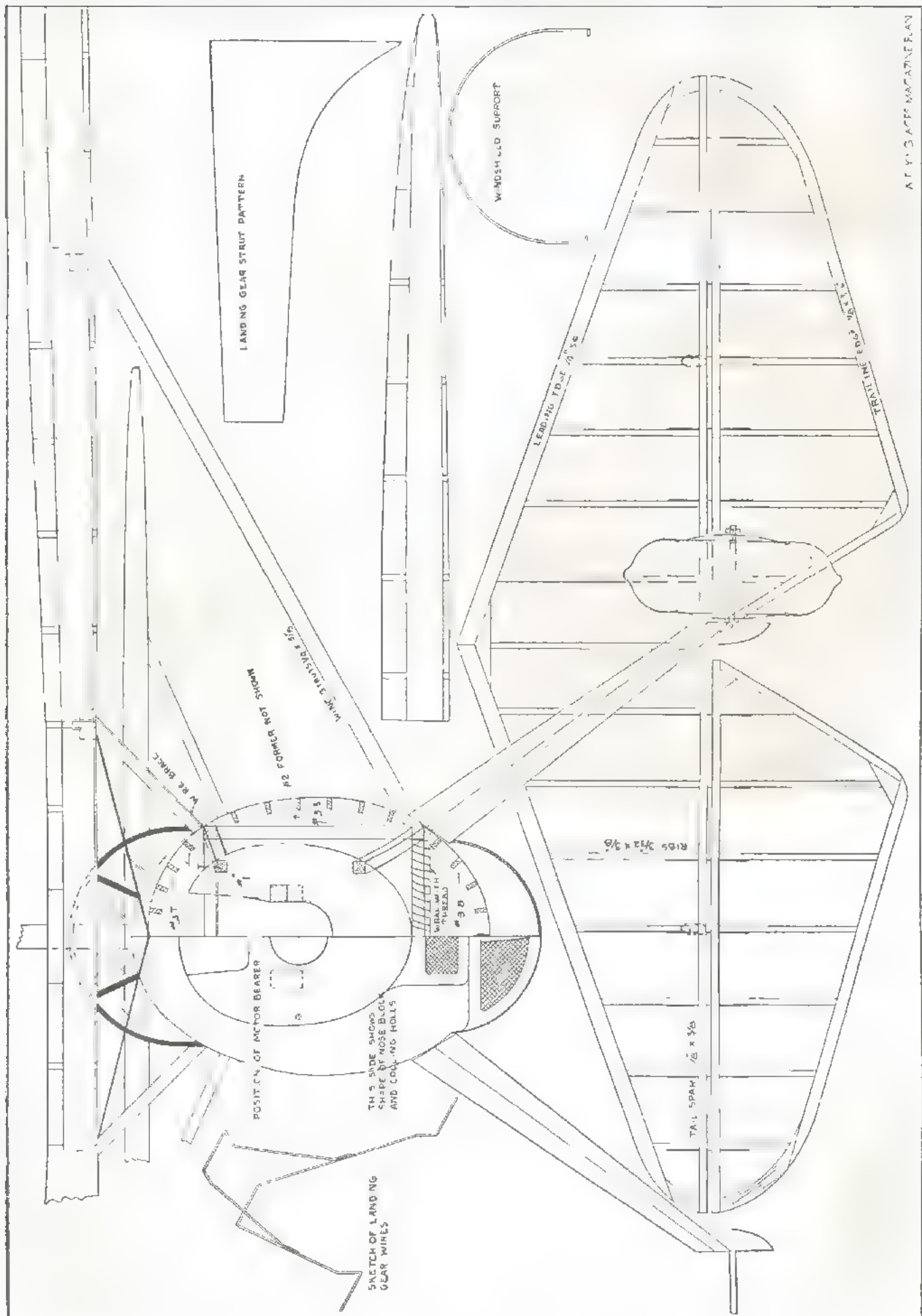
CONSTRUCT OUR GAS-POWERED DOUGLAS 0-41A—Plate 2

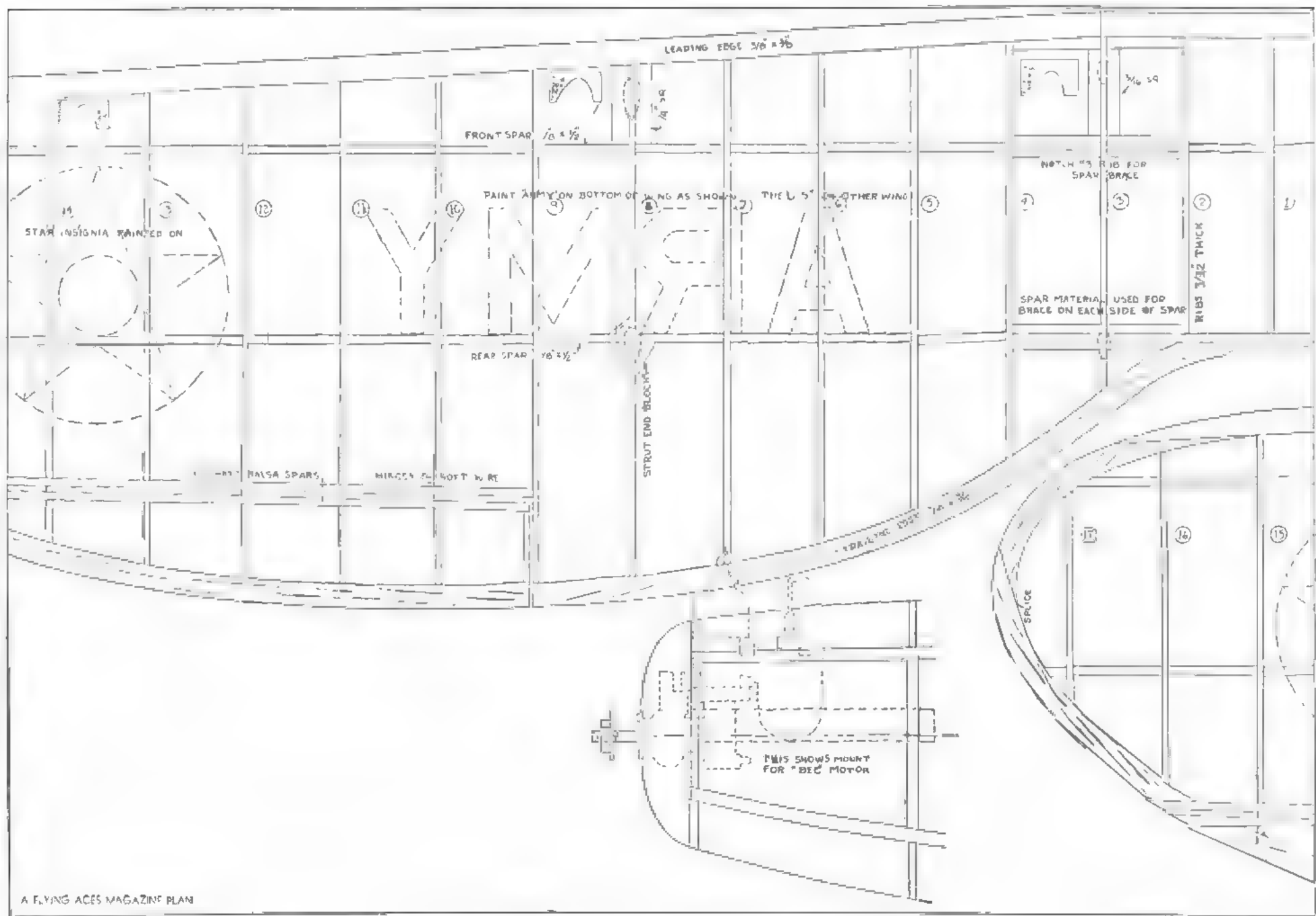


CONSTRUCT OUR GAS-POWERED DOUGLAS 0-41A—Plate 3





$$A \cap Y \supset A \cap F \cap N(A \cap A^{\perp} \cap F \cap A)$$




News of the Modelers

LATEST CONTEST ANNOUNCEMENTS

SCHEDULED for Sunday, November 6, a gas model meet staged by the Sportsman's Aero Club, of San Francisco, will be held at Moffit Field, Cal., fifty miles south of San Francisco.

Prizes will be offered for entries in both large and small bore classes. Full particulars may be obtained from R. A. Walker, president of the S.A.C., at 1553 Page St., San Francisco (Phone Hemlock 0732).

Another November meet will be the Fifth Works Progress Administration Scale Competition at Pittsburgh, Pa., which is planned for November 12. All scale models entered in the affair must be in the hands of Harry G. Vogler, director of the Aircraft Division, Boys' Club of Pittsburgh, 4412 Butler St., by November 9 at 9:00 P.M.

HOLD FIFTH N. Y. POLICE CONTEST

THE fifth annual air meet of the New York Police Athletic League and The Airplane Model Builders' Exchange (TAMBE) was held recently at Marine Park, Brooklyn, N. Y., with enthusiasts from the Metropolitan area and New Jersey participating in the five-event program for rubber powered and glider models.

The hand-launched glider event came first on the program. H. Schindelman, of the Bronx, N. Y., was declared winner with a time of three min. Alvin Felmeister, of Jersey City, N. J., was second with two min. 54 sec.; Morton Cooperman, of Brooklyn, was third.

A twin-pusher built and flown by Isadore Schaffer, of Brooklyn, won the stick event with a time of eight min., 44 sec. out of sight. Morton Kaufman, of Brooklyn was second with six min. 38 sec. out of sight, and Howard Beitchman also of Brooklyn, was third with a six min. out of sight flight.

Gordon Murray, president of TAMBE, won the cabin event with a flight of six min. 41 sec. out of sight. Schaffer was second in this event and M. Singer, of Coney Island, third. Schaffer's plane did 6:02 and Singer's, 4:10.

Herb Friedlander, of Brooklyn, took the towline glider event with a 6:02 out-of-sight flight. Gus Jung was second with a flight of four min. 15 sec., and E. Powell, of Jersey City rated third with a flight of 3:06.

The speed event was won by Jack Minassion of Long Island City. His craft covered the 120 foot course in one second flat. Henry Struck, Maurice Schoenbrun, and Howard Beitchman tied for second honors, and in a tie for third were Louis Garami, Morton Kaufman, and Gus Berger.

Herb Friedlander took major high point honors for the day with a total of 28 points, gained by his first, a fifth in the cabin event, a fourth in the stick event and a sixth in the hand launched glider. Morton Kaufman was second

high scorer. Jack Minassion was third.

Although the meet produced several record-breaking winners, few innovations were noted among the planes entered. Folding and free-wheeling propellers were used to a great extent by all powered entries, with a few using one-bladers. The towline gliders which placed in the upper brackets were, for the most part, quite small with wing spreads of two to three feet. They had standard balsa framework fuselages. The Friedlander winner was wrecked the night previous to the contest but was rebuilt in time to win. Speed models seemed to stress the importance of a fine finish to the craft and enough strength of fuselage to avoid buckling under power.

The police Department was represented at the meet by Lieut. Murphy of the 63rd Precinct. Dave Lynn, Director of TAMBE, acted as Flight Director for the day, with timing being done by eight recreational project directors of the W.P.A.

Prizes awarded the first place winners were a Comet Chipper Gas Kit for the hand launched glider event, a Brown, Jr., motor for the stick event, a Dennyrite motor for the cabin event, the Flying Aces Trophy for the towline glider event, an Imperial Gas Kit for the high point scorer, the Edward A. Lynn trophy for the speed event, and the Sears Roebuck Trophy for the

P.A.L. high scorer. The latter event was also won by Herb Friedlander.

Carroll Moon reported the meet for FLYING ACES.

THANKSGIVING MEET FOR FLORIDA

GLIDER, rubber, gas endurance, and 30-second engine run events will be featured in the State-wide meet to be conducted on Thanksgiving Day by the Lakeland High School Model Airplane Club, of Lakeland, Fla.

For full details, Floridian modelers should contact Walter Seegmiller, 921 E. Osceola St., Lakeland.

WOMEN WIN GAS EVENT

COMPETING against 30 other contestants in the gas model event at the recent Southern New York Outdoor Model Meet, Binghamton, two women—Ruth See, of Baldwinsville, N. Y., and Emile Guth, of Syracuse—took first and second places respectively. Mrs. See's time was 2 min. 47 sec. and Mrs. Guth's was 1 min. 52 sec. Interesting indeed is the fact that both of these flights were made after the ships had been soaked from "landings" in the Susquehanna River in previous flights the same day!

Fred C. Cooper, of Cortland, N. Y., was third "man" (actually he was first man and third placer) in the gas event.

In the hand-launched stick tourney, the honors were taken by Raymond Darling, Jr., of Utica, with a flying time of 2 min. 45.6 sec. He was followed by Robert Townsend, Charles House, and Norman Alderman, all of Binghamton.

Kale Harden, David Cramer, Richard Barber, and Donald Pratt, were the first four to place in the Fuselage R.O.G. event.

Mr. R. N. McCollom was chairman of the Aviation Committee, Exchange Club of Binghamton, which sponsored the meet.

PEORIA HOLDS TEN-HOUR TOURNEY

DESPITE a gloomy, misty day on the occasion of the recent Star-Junior N.A.A. contest at Peoria, Ill., the affair turned out to be the finest contest ever held in the vicinity. There were more than 5,000 onlookers and over 100 contestants.

Three events were run off. These were glider, stick fuselage, and gas. So many modelers were entered in each that it took ten hours to complete the meet. Among the prize winners were Jack Davis, 17, of Peoria; Burnett Brumms, 15, of Pekin; and Gene Swanson, 18, of Kewanee, all in Illinois. These three lads each won a year's subscription to FLYING ACES together with an F.A. Aviator's Positive Identification Bracelet.

Ralph H. Lewis, vice president of the

What Do You Say?

Here's your corner, buzzards, and it's open to all readers who have a model argument they want to get off their respective chests. Make your comments short and snappy, and we'll try to squeeze 'em in.

MORE ON THE "F.A. MOTH"

Editor, FLYING ACES:

I built an *F.A. Moth* from the plans by Herb Spatz in the August 1937 issue of FLYING ACES. It did 3 min. 23 sec.

I also built the *F.A. Glider* and it made 37 sec. before crashing into a tree. A man tried to stop it on another flight and wrecked it.

I think that *F.A.* should publish more plans for ships like the *Moth* and the *Glider*.

IRVING FRIEDMAN
Brooklyn, N.Y.

Editor, FLYING ACES:

I built the *Flying Aces Moth* from *F.A.* plans and won the Brandon contest with it. The first prize was a four-dollar airplane ticket, so I get my first ride upstairs next Sunday—thanks to Herb Spatz for designing that swell model. How about publishing some other jobs like it?

DAVE CARLE
Brandon, Manitoba, Canada

Peoria N.A.A. Chapter, served as F.A. reporter.

N. Y. MODEL CLUBS UNITE

AN association of model airplane clubs in the New York metropolitan area was formed recently when representatives of eleven leading model clubs met in New York City for the purpose.

Irwin S. Polk, Director of the Metropolitan Model League and active in the promotion of model aviation for some twelve years, was elected Chairman of the association. William Effinger, of the Majestic Aero Club, was elected secretary.

The purpose of the association is to guide and direct the interest and activities of the air-minded youth in the metropolitan area through proper leadership and supervision.

Model aircraft activity in the New York area is seriously handicapped by the lack of a proper flying field, and one of the most important objectives of the association will be to obtain a place where model builders can fly their miniature aircraft away from congested or restricted areas.

Many countries abroad subsidize model aircraft activity, which is an important source of future pilots. Thus modeling plays a valuable part in the future of national defense, and it is hoped that the united activities of the New York clubs will help focus national attention on this hobby.

The Association hopes also to enlist the support of all interested individuals or organizations. All model clubs in the area are invited to affiliate.

"JUNIOR AVIATOR" RESULTS

WINNERS in the Junior National Air Races held recently at Akron were as follows: *Junior Fuselage (Vincent Bendix Trophy)*—Robert Pfeiffer, of Cleveland, and William Kalman and Mike Gadjos, both of Akron. *Senior Fuselage (Peerless Trophy)*—Anthony Kazlouskas, of Akron; Ted Just, of Pittsburgh, and Arthur Walsh, of Cleveland.

Open Fuselage (Goodrich Trophy)—Mike Karlak, of Cleveland; Arthur Eck, of Johnstown, Pa., and Henry Thomas, of Akron. *Speed Race (Thompson Trophy)*—Jerry Kolb, of Cleveland; Edward Smith, of Pittsburgh, and Richard Korda, of Cleveland. (Since this was a three-way tie with each contestant's ship making exactly 60.2

(Continued on page 62)

The Market Log

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(Readers desiring further information on any of the items described in this department are invited to write direct to FLYING ACES Magazine, mentioning the items in which they are interested and the names of the manufacturers. And companies adding new goods to their line are also invited to notify Mr. Limber, who will be glad to describe the products. Send him full facts in care of this magazine.)

Berkeley Model Supplies now has six gas model kits in its line, the newest ship being the four-foot spanned *Buccaneer 48*. This craft recently won the "small gas championship" at Philadelphia with a flight of 2 min. 16 sec. following a 19-second motor run. The engine used on this flight was the new *Ohlsson 28*, which is distributed in the Eastern states by Berkeley.

Other ships in this company's gas line range from four- to nine-foot spanners.

Berkeley-designed gas craft have won more than 1000 prizes since the original *Buccaneer* was introduced three years ago.

International Models has been appointed sole distributor for *Pervel*, a new "wonder fabric" said to be the ideal covering for models of all kinds and for making parachutes, kites, or boat sails. It can be cemented, doped, or sewed. The company guarantees satisfaction in the use of this paper-fabric, which is an American product. Price—three 24" by 36" sheets for 25c postpaid.

Workbench Tips

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FILES FOR BALSA

BECAUSE of the soft texture of balsa wood, accurate sanding cannot always be done with sandpaper alone because of the risk of rounded edges or ground-off corners. A wood file is always helpful, and here's a simple way to make as many as you may need.

For each file, obtain a piece of hard wood about 8" by 1" by 1/4". Cut a strip of sandpaper of the desired grade, wrap it tightly around the end of the stick and cut it where the edges of the paper meet. Coat the back of the sandpaper with glue, wrap the sheet around the stick again, and snap a couple of rubber bands on to hold it tight until the glue is dry. Repeat the progress with a finer grade of sandpaper at the other end of the stick.

With several files of different sizes you will find it quite a simple job to work down nose blocks, wheel-pants, streamlined struts, and the like. You might find it convenient to round off the edges of one or two of your file-sticks for specific jobs, too.

—JOHN DALLAIRE, JR.

CARDBOARD "CLAMPS" FOR FUSELAGE

WHEN building a rectangular or square fuselage it sometimes is difficult to hold the sides in place while the bulkheads are drying. Here's a system I have developed to simplify this problem.

Build the two sides in the usual manner. Then select three key points along the fuselage, say, one point where the nose bulkhead is to fit, another a short distance from the tail, and the third about midway of the fuselage.

Now cut holes through three sheets of cardboard, each hole the same size as the cross-section of the fuselage position it is to fit. Slip these over the two sides, cement the bulkheads into place, and the cards will hold the whole assembly until the cement is safely dry.

—HENRY COOPER

WATCH FOR THE NEXT GREAT FLYING ACES



FACT—Many a plane built for our sea arm didn't have what it takes! Now it can be told—and Dave Cooke tells it in a revealing, foto-packed article titled: "—So They Went to the Navy Boneyard!"

"Clash Over the Carpathians"—a dramatic cover painting and article forecasting a new mailed-fist drive by the Nazis.

And the peppy eighth lesson of our fast-revving Jack Conroy flying course.

FICTION—Dick Knight grapples with the war-makers of Europe. A smashing novel of 1938 battle skies. Your favorite trio—Keen, Lang, and O'Dare—in the latest "Griffon" corker. Plus another swell Phineas Pinkham funnybone tickler.

MODEL BUILDING How to make the Navy's brand new Brewster Scout-Bomber. Orthof's ornate holiday whatisit—"The Xmastick." McCullough's "Kayo" a gas job for beginners.

In January FLYING ACES

On Sale November 28th (Canada One Week Later)

FLYING ACES

Strafe of the Skull

DECEMBER, 1938

(Continued from page 6)

speed, roll to a stop beside the crumpled JN

CHAPTER II

THE BLUE SKULL

BBROWN jumped from his ship, ran to the wreck. The broken wing hid him from view as he bent over the cockpit, but as the ambulance pulled up he turned toward the machine. His face was ashen white, and there was a look of horror in his eyes.

Kane was the first to reach him. Brown pointed a trembling hand toward the battered cockpit.

"Look!" he said hoarsely. "There—by the pilot's body!"

Kane's slitted eyes passed over the limp form of the pilot, then he stiffened. Leering out at him was a blue skull!

It was wedged between the edge of the cockpit and some tangled flying wires. Beside the pale, dead face of the pilot, it was like some mocking symbol, its weird color only adding to the horror of its appearance.

Without a word, Kane bent and opened the pilot's coat. He turned to the medical corpsman who had followed him.

"Yuh can't help him now, son. Five of them bullets went right through him."

The corpsman slowly nodded, then his eyes fell on the skull.

"Good Lord!" he whispered. "Was this thing—?"

"It was wedged there—just like that!" Brown broke in, his voice shaking. "It must have fallen into the wing from—from whatever got him."

The ambulance crew stared at the skull in awed silence. Kane carefully lifted it free of the wires and stepped back. The crash-truck roared up, followed by a Headquarters car containing Thorne and Jordan and the Jay twins.

Then Kane's probing fingers touched something within the skull, and he shot a quick glance inside it, as Brown and the ambulance men made way for the approaching Staff officers. The interior of the skull was old and yellowed, except for a smear of blue varnish, to which a torn fragment of paper adhered. Kane turned toward the wreck, and when he pivoted back, the bit of paper was palmed in his left hand.

Brown was tensely explaining what had happened as he followed Jordan toward the JN. The G-2 colonel glared at Kane.

"Give me that!" he barked. He snatched the skull from the other man's hand. "You keep out of this—we don't need any amateur Hawkshaws around here!"

Kane silently stepped back, Thorne brushed past, his shaggy brows drawn together.

"A blue skull!" he muttered. "Where in Heaven's name could it have come from?"

"Brown says it was caught in the wings," Jordan replied in an undertone. He turned the skull over. "Blue varnish—it's been painted recently. Must have been some crazy Boche using it as a symbol."

"You mean he tossed it into the JN's wings?" demanded Thorne.

"What else?" Jordan said acidly. "You don't think there was a blue skeleton flying around up there?"

"Don't try to be funny," rasped Thorne. "This makes the sixteenth—" he stopped, staring at the wreck. "A Jenny! This poor devil wasn't an ace—he didn't even have any guns. But what was a training-plane doing up in this area?"

Colonel Jordan motioned to Noisy Jay.

"Take the number of this plane and have it checked up at once. Find out where it came from, when it took off, and who the pilot was."

"Begg'n' yore pardon, colonel," interposed Kane, "but maybe if yuh was to search him yuh might find out right now."

Jordan's face turned beet red.

"I told you to get out of here!" he roared. But wheeling to Tom Jay he barked, "See if there's anything to identify him. Lieutenant Brown, take off and see if you can spot any Boche ships above those clouds."

The courier pilot was already on the way to his ship. He jerked around, saluted.

"I was just going to do that, sir."

He hurried on toward the Nieuport. Kane started after him, then changed his course and crossed to the waiting Staff car. The driver had joined the crowd at the wreck. Kane calmly climbed in, sent the machine rolling toward the hangars. In the mirror he saw the Nieuport swing into the wind to take off. He shoved the accelerator to the floor, raced to where he had left his Spad. Jamming on the brakes, he jumped out and strode to the cockpit.

"Twist her, son," he told the nearest ackemman. "I'm on business for th' general."

The mechanic sprang to the prop, and the still warm Hissco thundered. Kane leaned out as the man pulled the wheel-blocks.

"Yuh might take that car back an' tell General Thorne I shore appreciate th' loan."

He touched the throttle, sent the Spad trundling briskly into the wind. The Nieuport was at a thousand feet and climbing fast. As the bullet-marked Spad lifted, he banked steeply, wings almost scraping the ground, and pointed the ship in the direction of Chaumont. Engine wide open, he kept the Spad nosed up until it reached the clouds. The instant they closed about him he turned and headed East.

IN ANOTHER MINUTE the Spad broke through into clear sky. Kane shot a quick glance about him, saw the Nieuport half a mile distant, flying

southeast. There were no other ships in sight. He eased the throttle slightly, so that he would not overtake the slower plane, and then, keeping in the top of the clouds, followed carefully.

The sun was bright, and Kane's face was reflected clearly in one of the glass dials before him. If General Thorne or the Jay twins could have seen that reflection they might have been more than startled. For a subtle change had come over that face. It was still lantern-jawed, but the mouth had relaxed, the slitted eyes opened wider, and an expression of faintly whimsical humor had replaced the dry manner of the laconic cowpuncher-pilot.

It was as though another man looked out behind the weatherbeaten features of Tex Kane. But perhaps not even the Jays would have guessed. For the eyes were those of a man they thought dead—the eyes of Captain Philip Strangel.

For a moment, Strange's whimsical smile rested on the reflection in the glass.

"You can take a rest now, my friend. I think we've established Tex Kane pretty solidly."

Not even Colonel Jordan had guessed—and the chunky little G-2 colonel was the only man, except the two at his new hideout, who knew he was alive. He chuckled as he remembered Jordan's wrath at his suggestions, then his eyes flicked ahead to the Nieuport and his face sobered.

Perhaps he had made a mistake, not seizing "Brown" back at the field. He had recognized the spy instantly as Hans Schweinhart, one of von Zenden's special group, with whom he had tangled several times. Both the Jays had seen a picture he had sketched of the man, but his broad hints had failed to arouse their memory. It was probably just as well now, for it was obvious that the spy knew the answer to the riddle of the blue skull, and by following him unsuspected he might learn something of value before he darted in to force the Nieuport down.

Strange had no intention of letting the pseudo-courier pilot cross the Front, but by learning his course he hoped to determine his destination. There was a danger that Schweinhart might destroy the paper he had evidently taken from the skull, of which Strange had retrieved but a torn fragment. But the German would probably have been able to rid himself of it back at the field before he could have been searched. Accusation by the unknown Tex Kane would have been ridiculed unless he had identified himself—and that would have ruined the purpose of his carefully planned masquerade.

Strange took out the scrap of paper he had found in the skull. It was, roughly, a triangle about two inches across its longest side, and on it several groups of figures had been scrawled. There were four groups in the first line, three in the next. But neither line was com-

plete. It was a code which he did not recognize.

He put it back in his pocket, thoughtfully watched the Nieuport, which was now flying South, parallel with the Vosges foothills. It was a coincidence, to be sure, but this was almost the same course he had flown two hours ago.

What was Schweinhart up to? It was obvious that he had been ready for something, but he could not have known the JN would crash on the Third Wing field. Probably, Strange made a shrewd surmise, Schweinhart had been secretly warned to intercept the JN, but some one else had saved him the trouble. That could only mean that the man in the Jenny had known something vitally important. But what could a rookie pilot attached to some rear line training field learn about German espionage?

THE NIEUPORT suddenly began to circle. Strange swung in a wider swing, keeping down in the clouds so that he could just see the other ship.

There was a powerful field-glass in a zippered pocket below the throttle. He took it out, focussed it on the Nieuport. Schweinhart was bending over in his cockpit, but in a moment he straightened up, something in his hand. Strange looked hastily around the sky. The thing in the spy's hand was a canvas message bag of the type sometimes used for dropping orders to infantry at advanced positions. But this one had a large ring at one end, and he realized at once that the German intended to meet another Boche pilot and transfer the message he had taken from the skull.

The Spad's circle had taken it around to the east of the Nieuport. With swift decision, Strange shoved the fieldglass into its pocket, charged his guns, and shoved the throttle full open.

The American's fighter shot out of the clouds as though hurled from a catapult. He was within half a mile of the Nieuport when the spy saw him and zoomed. Strange tripped his guns, stabbed a burst past the Nieuport's left wing. The spy kicked away, tried to reverse. But Strange drove him back with another burst to the right.

Schweinhart pulled into a wild Immelman and blasted out a flash of tracers that missed the Spad by a hundred feet. Strange followed through, the Nieuport's tail almost in his sights. He shifted the rudder, was about to fire past the spy's wingtip and try to force him down when a lightning premonition sent him whirling off to one side.

The next instant, two streams of tracer smoked through the space where the Spad had been. Three red-nosed Fokkers had plunged headlong out of the sun!

Spandaus blasting, the three D-7's hurtled after the G-2 ace. Strange rammed the stick forward, dived into the clouds. The steamy white masses had barely closed about him when he pulled into a swift chandelle. Wings screaming, the Spad shot out of the clouds a quarter of a mile from where it had disappeared—to see one of the Fokker pilots lowering a weighted cable with a hook at the end and Schweinhart

trying to seize it and transfer the message bag.

A burst from the Spad's guns sent the Fokker pilot into a hasty climb. Schweinhart dropped back into his seat, charged furiously at Strange. The G-2 ace rolled tightly out of range, crouched as the second red-nosed fighter drove a fusilade into his wings. The acrid smell of phosphorus was in his nostrils as he whipped back at the D-7, and a fresh pattern of bullet-holes lay across the cowl. The third Fokker was darting in, Spandaus winking, while the first Boche hurriedly began to wind up the dangling cable.

Strange clamped his trips and raked a red-painted tail that swam into his sights. His bullets smoked above the pilot's head, thudded into the Mercedes motor. The Fokker staggered, fell off and dived away to the east, a thin plume of smoke betraying its crippled engine. Schweinhart plunged in with redoubled venom, and a hail of slugs from his Vickers gouged the Spad's tilted left wing. Strange backsticked, snapped around at the top of the zoom.

The Fokker with the cable was a hundred yards on his right, with the hook still dangling, fifty feet underneath. In a sudden turn, Strange plunged toward the ship, the other D-7 almost on his tail. For an instant the Spad trembled under the lash of pounding Spandaus. Bullet-holes marched in along the right wing, smoking toward the cockpit. Strange lunged on the stick, dived under the plane with the cable, barely missing the hook.

Above the Hissos's thunder he heard the faint crash he expected. He turned, but instead of the pursuing Fokker it was the Nieuport which he had trapped! Racing in from one side, Schweinhart had cut off the D-7 pilot and flown into the hook. With its tail torn clear off, the Nieuport whistled onto its nose and went screeching down the sky.

With the Nieuport's broken rudder flapping from the hook, the Boche in



the contact Fokker hurriedly pulled aside. But the other man charged in, his face distorted with rage. His first burst gouged the Spad's wingtip as he overshot. Calmly, Strange crossed his stick and rudder, stared over the blue-black Vickers. The Fokker was whirling back, Spandaus blazing again. A split second, the G-2 ace waited, till the Fokker was square in his sights. Then his fingers closed on the trips.

Like snakes, the loaded belts writhed through the twin Vickers. Ugly gray smoke puffed out from the Fokker's cowl, hid the man at the stick. Strange ruddered away, then looked back. The Boche had nosed down, was skidding to keep the smoke from his pit. Then there came a flash of bright flame, and the D-7 was instantly ablaze from nose to tail. Out of the inferno tumbled a blackened figure that turned over and over

as it fell. Strange looked away, fought back the sick feeling that always came when he saw a flamer.

The contact-plane was fleeing, part of the Nieuport's rudder still hanging from the cable. He watched it vanish as the pilot glided into the clouds. It might have been an easy victory—but he dare not waste time on victories. He must find an additional clue, beside the paper which Schweinhart had taken—and now he had neither.

"That's what you get for being a pig," he muttered to his reflection. "Should have forced Schweinhart down as soon as he was out of sight of Third Wing."

He closed the throttle, spiraled down, and finally located the smouldering wreck of the Nieuport. It lay in a deep, shadowed chasm, several miles from the nearest road. It would take at least two days for men to reach it, and the message bag might have fallen out during the ship's plunge. The chances of finding it in readable form were small, even if it were located at the wreck.

CHAPTER III

HIDEOUT

FIVE HUNDRED FEET above the chasm Strange opened the throttle and headed South, climbing above the increasingly rugged slopes. Ten minutes later, after a quick glance about the sky, he nosed the Spad down into a desolate-looking canyon. The frowning rock walls pressed in closer as he neared the bottom, until there was barely a hundred feet between the wingtips and the rocks. He kept the Hispano revving up slightly, until a zigzag, yellowish mark appeared on the right-hand cliff. As the ship passed the mark, he cut the throttle, and the Spad settled to the canyon floor.

A tiny stream ran along the left side of the improvised landing-space, and on the right the wall rose sheer for two hundred feet, where a ledge jutted out partly hiding the sky. Extending up from the ground-level, almost directly under this ledge, there was what appeared at first glance to be a slightly rugged outcropping about sixty feet wide and somewhat over twenty feet high. Only a closer inspection would have shown that it was papier mache molded in the shape of rocks and cleverly painted to match the surrounding wall.

Strange ruddered the Spad toward this spot, switched off the motor, and climbed out. He waited a moment, but nothing happened.

"Okay, Mike!" he said, lifting his voice. "What are you waiting for—an 'Open Sesame'?"

A few seconds later, the camouflage section slid sideways, pulley wheels creaking on a wooden overhead track. A red, good humored Irish face appeared around the edge, followed by the thickset body of Sergeant Mike Muldoon, who, as he himself modestly admitted, was "the best damned mechanic in the AEF."

"Sorry, Captain," Muldoon grinned,

"but I wasn't expecting you back so soon. Ling Foo and I was just polishing off a little chow."

A short, plump Chinese with a face like a full moon emerged from the semi-gloom of the cavern. He bobbed his pig-tailed head and smiled, showing two gold front teeth—his most prized possessions.

"Will the most esteemed captain be desirous of food?" he inquired in ponderous Cantonese.

Strange answered him in his own tongue. "I'm afraid, Ling, that he will be very much desirous. My expected host didn't invite me to stay for luncheon, after all."

"It is most regrettable," sighed Ling. "I will hurry—but there will be a slight delay. This hollow-legged Irishman has devoured not only his share but most of mine. I will have to prepare more."

The Oriental looked sidewise at Muldoon as he spoke.

"Speak English, you slant-eyed mon-goose!" roared the sergeant. "I know you're talking about me—but you haven't the nerve to say it to my face."

Ling lapsed into pidgin English. "Face like yours, take plenty nerve to look at. Catchee big pain in stomach." And he vanished in the shadows.

The G-2 ace discreetly smothered a smile, motioned to the Spad. "Help me roll the ship inside, Mike. You're going to have a little job patching her up again."

Muldoon whistled as he saw the new bullet holes.

"I'm thinking I'll be needing a squad to keep up with you, Captain. You're sure making up for that lost month."

"You can take your time on the job," said Strange. "If I go out again today, I'll use one of the other ships."

THEY shoved the Spad into the cavern past five planes which were lined up not far from the entrance. Muldoon threw a switch, and the camouflaged door rolled shut. As its lock clicked into position, an automatic switch turned on two overhead lights, illuminating the cavern and the quarters which had been built in it.

The space was an approximate oval, about two hundred feet on its longest axis and a hundred feet across. A crevice in the walls at the far end admitted faint light and made ventilation simple. Muldoon had rigged up a suction fan, operated by the portable generating system which also lighted the cave. Close to the crevice, six rooms had been built, using material which Jordan had secretly made available and which Muldoon had smuggled in by truck, using a road that led into the canyon at a point ten miles to the North. In addition to quarters for Strange, Muldoon, and Ling Foo, there was a small mess nook, a kitchen, and a combination make-up and file-room where the G-2 ace kept all his disguise accessories and the files of intelligence data which had been removed from his former hideout.

The ships, which had similarly been placed at his disposal by the G-2 chief, consisted of another Spad, a Nieaport, a Breguet two-seater, and two captured

German planes—a Fokker D-7, painted dead black, and a checkered Hallerstadt two-seater. Drums of gasoline and oil were ranged along the wall, beside stacks of boxes including engine parts, ammunition, small bombs, and supplies in amounts planned to last at least three months without replenishing.

The lead-in of a wireless set ran out through the crevice to concealed antenna. Thus far, Strange had refrained from using the transmitter, his agreement with Jordan being that he or Muldoon should listen in at prescribed times for code messages. These messages, Strange had suggested, would be ostensibly sent to some G-2 agent hiding in Germany, so that no one at Chaumont would guess the truth. Only in emergencies would he transmit an answer or query Jordan on their specially assigned wave length.

Unbuckling the six-guns, Strange took off his leather jacket and helmet and went into the mess. In a short time, Ling Foo appeared with bacon and eggs, toast and coffee.

"If the honorable captain will forgive monotony of second breakfast," he said apologetically, "Ling will make extra effort for dinner. There was soup, steak and potatoes, but—"

"This will be all right, Ling," said the G-2 ace. "But I think it's about time Muldoon and I went on another foraging expedition to that little farm down in the foothills."

He had finished eating and was lighting a cigarette when Muldoon hurriedly entered.

"Captain, there's a D.H. spiraling down over the canyon! You must've been followed!"

"No," said Strange, "I took good care of that. I've a hunch I know who it is, but we'll take no chances."

He buckled on his guns, followed the Irishman out to the entrance, and in a moment the lights were extinguished. Lifting a small hinged panel, he looked up through a peep-hole in the camouflaged door. The D.H. was gliding down between the rocky walls. It leveled off, bounced on the canyon floor, and came to a stop about two hundred feet from the secret entrance. The pilot leaned out, pushing up his goggles, and Strange recognized the grizzled features of General Thorne. Colonel Jordan stood up in the rear seat, motioning the Air Service chief to taxi ahead. Thorne complied, then switched the engine off and glared back at his companion.

"Now, maybe you'll explain all this mystery business! What the devil's the idea of landing in this God-forsaken spot?"

"Just a second," chuckled Jordan. "I've got a surprise for you."

Strange motioned for Muldoon to open the door. As it slid back, Thorne sprang up in the cockpit, one hand at his hip. The G-2 ace stepped into sight.

"Hold yore horses, General," he drawled. "I'm aimin' to be friendly."

Jordan's amused look had changed to one of stupefaction.

"Kane!" he spluttered. "What the devil are you doing here in—" He stopped, as sudden comprehension

dawned on him. "Strange! You idiot—why didn't you let me know it was you!"

All the color went out of General Thorne's face.

"Strange!" he whispered, then grasped at the cowl to keep himself from falling. "You mean—Strange isn't dead?"

"No more than you are," said Jordan. "That's what I—"

"Look out!" said Strange. He sprang to the side of the D.H. as Thorne slumped down in his seat. "For Heaven's sake, Colonel—why didn't you break it a little more gently?"

"I never thought a tough old bird like Wild Bill Thorne would pass out," murmured Jordan. "Guess it was a jolt, at that—he thought a lot of you."

In a few moments the general opened his eyes. He put out an unsteady hand and touched the G-2 ace.

"Strange—is it really you?"

"No one else, General," Strange said huskily. "Sorry it gave you such a shock."

Thorne's fingers closed on his arm. "That's all right—now."

HE PULLED himself up in the seat, sat gazing for a moment at Strange's made-up face. Sergeant Muldoon, who had watched open-mouthed, disappeared and returned in a minute with a glass of cognac. Thorne tossed off the brandy, and the color came back into his cheeks. He glowered at Jordan with a return of his usual spirits.

"You numbskull! Why didn't you tell me Strange was alive?"

Jordan flushed, and Strange quickly interposed.

"It was my fault—I told him not to tell anyone until I'd worked out a scheme for covering everything."

"Then that cock-and-bull story about the fight in your basement was all a fake?" Thorne snorted at the G-2 chief.

"No, it was just as I told you—except that Strange got out alive," replied Jordan.

Strange's eyes sobered.

"Every one else was killed by the cyanide gas, General. I was partly stunned in the fight, and they thought I was unconscious. When I heard von Zenden tell them to release the gas, I breathed Yoga fashion as fast as I could, so I could hold my breath for three or four minutes. The Germans cleared out as soon as the gas-grenade went off, and I managed to crawl upstairs to an open window. When Colonel Jordan found me later, I told him to pretend I'd been killed with the rest, so that von Zenden wouldn't be murdering any more agents trying to get me."

"But the burial! I've talked with five or six men who told me they saw you in your coffin," Thorne said dazedly.

"Strange managed that with a wax mask of his face," explained Jordan. "I put it on an unidentified soldier killed at St. Mihiel, a man about Strange's size. I knew that von Zenden would have some one watching to be sure he was dead, and I checked every one in the group that came to pay their last respects. I found two cases of faked identities, so it's obvious the Germans

weren't just taking von Zenden's word. Later I let the spies go so the Boche would be certain to learn that Strange was finished."

Thorne climbed out of the cockpit, stared into the gloom of the secret cavern, their back at Strange.

"And you've been hiding in this damned hole all the time?"

"It's not so bad as it looks from here," said Strange. "Come on in. You can leave the ship here temporarily—that ledge hides it."

The general looked around in astonishment when the lights were switched on.

"How'd you get all this stuff down here?" he demanded.

"Colonel Jordan had it left at the Q.M. depot in Toureville on special assignment," answered Strange. "Sergeant Muldoon here brought it in through a road that leads into the canyon. Each load was assigned to him on confidential G-2 orders; both G-2 and the Quartermaster Department were told it was for some scheme the colonel had up his sleeve—and not to talk."

"I flew the ships here. You see, I'd go out on the truck with Muldoon, made up enough to get by, and bring a ship back while Muldoon brought in supplies. Colonel Jordan and I worked out the plan before he smuggled me out of Chaumont."

"I've covered it all up pretty well," said the G-2 chief, complacently. "That's one good thing about intelligence—you don't have to account for what you do. But we'd better get down to business. I guess you know why we're here, after that confounded Kane trick. What was the idea of that, anyway?"

"I got tired of waiting to be used," said Strange. "I've been catching those code reports about all the aces being killed, and the information leaks. So I thought I'd poke my nose into it."

"Well, you did that, all right," growled Jordan. "If I'd been able to catch you when you made off with that Staff car, I'd have had you locked up."

STRANGE led the way into his quarters, which had been furnished with most of his possessions from his former retreat. Light shone down from a cannibal tom-tom drum suspended from the ceiling, reflecting from the bowl of a Turkish water-pipe which stood beside a huge carved chair. A Moorish scimitar and a Moro kris stood crossed in one corner, and a captured Spandau gun hung over the doorway.

A wooden floor had been laid, and upon this was stretched a thick Persian rug. A well-filled bookcase stood against the wall, from the top of which a jade Buddha smiled down benevolently. An open violin case lay on the study table, in it a worn Stradivarius. At any rate, the souvenirs and mementoes of his wanderings through the Orient and other parts of the world gave the room a colorful appearance.

"Incredible!" Thorne said, half under his breath. "If I didn't know better, I'd think we were back in your old place. I've a good notion to move into this cave

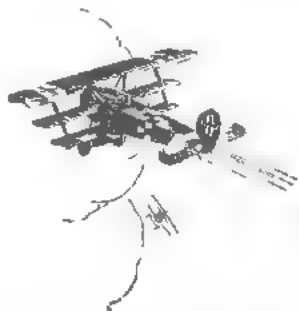
myself, and get a little peace and quiet."

"You'd find it pretty lonesome, General," Strange answered. "It's not the most pleasant thing in the world, being a living dead man."

"At least you can take off that make-up while you're down here," said Thorne. "I'd like to get a good look at you once more."

The G-2 ace shook his head.

"This isn't make-up, unfortunately. I'm taking no chances of the *Nachrichtendienst's* finding I'm alive. The role of Tex Kane isn't one that can be exposed by any slip in make-up. This baked look comes from a sun-lamp and special oils. With my eyes protected, I've squinted into the lamp for hours, to get these creases at the corners. I've an overlay fastened to my lower molars, to give that lantern-jawed look. My



hair's dyed this sandy color, and so are my eyebrows. I've even injected a little paraffin into the sides of my nostrils to change their shape. The rest, of course, is a matter of altering my expression and my voice and walk."

"But, good heavens," expostulated Jordan, "you'll ruin your face with that stuff. You'll get it all out of shape."

Strange laughed.

"I don't sleep with the overlay in place and the paraffin can be squeezed out quickly, using heat. But let's forget Tex Kane for a minute. How much have you learned about the blue skull affair?"

"Mighty little," Jordan said grimly. "That's why I wanted to see you. Why did you run off and come back here just when things began to break?"

"I was chasing an old friend of mine—Hans Schweinhart, the fellow you called Brown."

"What?" howled Jordan. "You knew he was a spy, and you let him go?"

"I had a reason," Strange explained, describing the fight which had followed his pursuit of the spy. "I'll admit it was a mistake—I should have tried to get the drop on him there at the field. But you'd probably have had me seized before I could explain and somebody might have taken a shot at me."

"Probably would," Jordan said gloomily. "But if we'd only got hold of that paper you've just told us about, it might have explained everything."

"I've an idea that—" Strange broke off as Muldoon appeared at the door. The sergeant was holding out a scribbled message.

"Just caught this over the air, Captain," he reported. "It's in our special code."

CHAPTER IV

INTRICUE AT ISSOUDUN

"IT'S PROBABLY the name of that Jenny pilot," exclaimed Jordan. "I told Noisy Jay to send it on the special wave length and in that code, as soon as he got it. He doesn't know, of course, for whom it was meant."

Strange took pencil and paper, swiftly deciphered the message.

"The pilot was Second Lieutenant Benny Todd," he told Thorne and Jordan. "Student in the primary school at Issoudun. He had forty-three hours in the air. Came from Omaha. Nothing unusual in service record. Took off without permission at 10:17 this morning before anyone could stop him. Appeared upset about something, according to mechanic's report relayed by phone to Toul."

"A green kid from Omaha," muttered Thorne. "Why would the Boche have been after him?"

"He must have stumbled onto important information," said Strange. "The key to this thing is evidently at Issoudun, and it must have a strong link with German espionage, for Schweinhart was one of von Zenden's pilots in the group that corresponded to our G-2 air unit, and he was obviously tipped off to try to intercept Todd."

"Then von Zenden himself must be mixed up in it!" gasped Jordan. "I've suspected his hand in these information leaks, and now it looks as though they're tied in with the killing of those aces."

"What about the blue skull?" Thorne said bluntly.

Strange gazed absently at the rug.

"Schweinhart tried to steer us toward the idea that it fell into the Jenny's wings from some mysterious source. I'd say that Todd had the skull with him and was bringing it to Third Wing. For some reason he was afraid to reveal his information at Issoudun."

"That settles it!" Jordan said fiercely. "I'll find the answer if I have to tear that place wide open."

"Issoudun's a big post," said Strange. "It would take a dozen agents a week to comb it thoroughly in regulation fashion, and the fish might slip through your net. Give me twenty-four hours to prow around there, before you start a dragnet. Nobody would suspect Tex Kane of being connected for G-2."

"But what excuse will you have for being there?"

"I'll report in as a combat instructor," replied Strange. He went over to a typewriter desk. "Here's an Air Service letterhead. General Thorne can sign the order, so there won't be any question about it."

"All right," said Thorne. "But what about your medical and service and pay records?"

"I'll take care of those," interrupted Jordan. "They're often delayed a week or more after a man reports at a new post, so there'll be plenty of time to fix up some fake ones and send them to Issoudun."

Strange typed out the order, then watched Thorne sign it.

"Thank yuh, General," he drawled "I shore do appreciate it. As I was tellin' th' Colonel here, I always sort of hankered to be a spy."

* * * * *

THE LAST VESTIGE of color was fading from the clouds beneath the Spad, as the twilight slowly deepened. Strange glanced at the clock, peered down through breaks in the clouds. By dead reckoning he was within ten miles of Issoudun. He eased the throttle half way back, shoved the stick forward, sending the fighter down in a fast glide.

A gap in the clouds appeared about a mile ahead. He ruddered to pass through it, then suddenly pulled up and shoved the throttle open again. A plane had just emerged from the cloud beneath him, was scudding along to plunge into the concealment of the next one. Its wings were gray so that it almost merged with the dusk, but Strange recognized the outlines of an Albatros.

He nosed down, Hisso wide open, charging the Vickers as he dived. The Albatros was within two hundred feet of the cloud for which it was racing when the pilot jerked around in his seat. A freezing sensation went through Strange.

In place of a head there was only a ghastly blue skull upon the pilot's shoulders!

Weirdly luminous, it was as though some unearthly flame played around that leering horror. For a space of a second, the G-2 ace sat paralyzed at the stick. And in that moment, the Albatros whipped up and around in a furious chandelle.

No gun-flare showed at the tips of the twin Spandaus. No tracers sparkled between the two ships—but a vicious pound of bullets into the Spad's right wing told Strange that he was under fire. He hooted the rudder, snapped around in a vertical bank that threw him inside the other ship's turn. Vickers rasping, he hauled back on the stick, trying to bring the Albatros' tail in his sights.

With incredible speed, the blue-skulled monster reversed. A zigzag line of holes shot along the instrument board of the Spad, and shattering glass blew back at Strange! He threw his arm up in an attempt to shield his face, felt warm blood spurt as he yanked the stick hard back. As the Spad stood on its tail, the Albatros zoomed steeply. He waited a taut instant, with the grim realization that the tracerless guns might strike him down before he could finish his trick. Then the Spad's nose snapped down in a furious whiplash. It was only a fraction of a second that the other plane was under his spouting guns, but he saw the tracers leap to the crouching thing in the cockpit.

With a surge of triumph, he watched them strike into the hideous blue skull. But to his amazement the figure did not fall. The leering skeleton face jerked around as though to mock him—then with a sudden plunge the Albatros vanished in the clouds.

Motor rearing, Strange went after it. The Spad burst through, five hun-

dred feet below, and he cast a quick look about the graying sky. There was no sign of the mystery ship. He was about to zoom back through the clouds, to see if it had climbed above them again, when it pitched into sight three hundred yards away.

Below and to the west, the four-stage field of Issoudun spread out vaguely in the twilight. Several planes were in the air, the nearest being two Spads which flew side by side toward the primary field. The Albatros whirled in a swift turn, dived after them. Strange followed, wings screeching, his skilled fingers taking up the slack of the Vickers trips.

The two Spads abruptly split and zoomed, as the pilots saw the descending Albatros. The blue-skulled figure hurtled after the one on his right, and the Spad he pursued reversed wildly. Strange jumped as the other Spad pilot raced past him to aid his comrade. It was one of the Jay twins!

A burst flamed from the first Spad's guns, but it went wide of the Albatros. Strange clenched his trips and shoved the rudder. His ship jumped sidewise in its screaming dive, and two cherry-red streaks lanced over the tail of the German ship. The blue skull twitched around frenziedly, and its hideous eyeless sockets glared from Strange to the Jay twin's ship. Before it could turn back, the other twin was charging in, Vickers clattering fiercely.

In a lightning turn, the blue-skulled figure plunged between the Jay twins' ships. Strange whirled with a tight split-S, as the Jays were forced to cease fire. But before he could range his guns, the Albatros was three hundred yards away, hurtling down at the advanced-stage field.

PHILIP STRANGE followed, holding his fire until he could get closer. Men were darting about on the field below, and the ships in the air were scattering madly or trying to land. Like a hungry hawk, the blue-skulled horror pounced



on the nearest plane. It was a Nieuport, a trainer devoid of guns. Strange saw it stagger in mid-air as the tracerless bullets of the masked Spandaus struck it.

The Nieuport plunged to the ground and burst into flames, and an ugly glare lit up the sky. At terrific speed, the Albatros shot above the burning ship, banking in a vertical turn. For an instant the blue-skulled killer seemed to leer down at the pyre of his victim. Then his right arm flashed up to his hideous head, and with a savage pull he jerked it free from his shoulders.

Leaning out, the headless figure hurled the blue skull down into space. The men who had run toward the flamer broke and fled in panic as the skull

struck in their midst. Crouching over the controls, the headless killer fled away from the glare and into the shrouding gloom.

Strange had loosed a burst at long-range in a desperate attempt to save the man in the Nieuport. As the ship crashed and blazed, he had banked away to keep out of the geyser of flame which spurted up. By the time he could see past the inferno, the Albatros was zooming into the night. Hisso blasting, Strange went after him, but the lead was too great. In another minute the killer's ship was swallowed up in the clouds, and he now knew further pursuit was useless.

The Jays were landing, and after waiting to be sure they would not be attacked again he followed them down. Most of the crowd had gathered near the burning Nieuport, but a small group began to cluster around the Jays' Spads as Strange taxied in and switched off his motor.

Both the Jays shoved through the group and ran over to Strange as he climbed out.

"Thanks a lot!" exclaimed Noisy. You certainly saved our—" he stopped, as he recognized the supposed cow-puncher pilot. "Kane! How did you come to be here at Issoudun?"

"If you got eyes in yore head," Strange said, "I reckon yuh can see I come here in a Spad."

"Did you see what happened when that ship flew over the wreck?" Tom said excitedly.

Strange nodded. Tom stared toward the blazing Nieuport.

"It's insane—the whole business!" he said tensely. "But I saw it happen—whatever it was pulled off its head and threw it down there!"

The group of mechanics and student pilots parted to admit a fat, pompous-looking captain followed by two second lieutenants.

"Get everybody back!" the captain snapped at the junior officers. He wheeled to Strange and the Jays. "I'm Captain Denton, adjutant here at Issoudun. Who are you, and just what happened up there?"

"We're from G-2," Noisy said in an undertone, motioning to include Tom. "We were sent here to check up on the Todd Case—and this blue skull devil is certainly hooked up with it some way."

Denton's fat face was a trifle pale.

"Of course, it must be some horrible trick," he mumbled. "I saw the whole thing—a sickening business—"

"If yuh don't mind, Captain," drawled Strange, "could we adjourn this here meetin' to th' dispensary? This cut on my arm don't hurt much, but it's sort of leakin' an' my extra duds won't be here for some time yet."

"I didn't notice you were wounded," said Denton, stiffly. "Come along—all three of you."

As they went toward the dispensary, the Jays hurriedly described to Denton what had happened, including the puzzle at Toul that morning.

"The report we got didn't mention any blue skull in connection with Todd," said Denton. "All we heard was that

he'd been shot down mysteriously."

"We reported it that way so the story of the blue skull wouldn't get around," explained Tom. "The assistant chief of G-2 sent us here to check up on Todd's background. If anyone asks, tell them we're just a couple of combat pilots sent here for instruction duty."

"What about you?" Denton said to Strange. "Are you with G-2?"

"Nope, I ain't smart enough for 'em," Strange said drily. "I offered my services to th' head mogul, an' all I got was a kick in th' pants."

"Then what were you doing this far from the Front?" demanded Denton.

"I was aimin' to report, peaceable-like," replied the G-2 ace. "Th' name's Cap'n Tex Kane, just up from th' Casualty Pool."

"I thought you were ordered to the ace patrol," Noisy broke in sharply.

"That was afore I took a notion to borrow th' general's car this mornin'," Strange said ironically. "You an' him has got th' same habit of gettin' riled up easy. Looked like for a minute he was goin' to send me packin' off to Blois, but he finally said he reckoned this place would take th' starch out of me."

"You'll soon find yourself in Blois, if you start any trouble here," Denton said disagreeably.

THEY had by this time reached the dispensary, and Denton turned to dismiss the two lieutenants, who had followed them.

"Wait," said Tom Jay. "They might be helping us check up and find out who knew Todd."

"That's a big order," the other man said dubiously. "There are several thousand men on this station. But I'll see what I can do. You go ahead, and I'll join you inside."

Strange ambled into the hallway, with the Jays behind him. As the door closed, he shot a quick look around to be sure that no one was near, then turned to the twins.

"Yuh may not want my advice," he drawled, "but if I was aimin' to get th' lowdown on this fellow Todd, I'd sort of nose around private-like an' find who's packin' up his stuff to send home. Ten to one, it's th' sky-wrangler what was his buddy."

"That's a good idea, Kane," said Tom Jay. "I'll duck out that side door and see what I can learn. Noisy, you stay here—I'll call or meet you here in half an hour."

A few moments after he had gone, Denton came in. The fat captain looked around the hall.

"Where's your brother?" he said to Noisy.

"He went to look at that blue skull," Noisy told him.

"I saw what was left of it after it hit the ground," said Denton. "It was just an ordinary skull, painted blue on the outside."

He led the way across the darkening field to the office, where a sallow Medical Corps lieutenant stood gazing out of a window toward the burning Nieuport.

"Fix up this man's arm," Denton said curtly.

"What happened out there?" exclaimed the lieutenant, as he motioned them into the first-aid room. "Does the crash-squad need any more help?"

"No, the Nieuport pilot was trapped in the wreck," Denton said gruffly. His eyes shifted toward the top of a medicine cabinet for an instant before he went on. "It was some fiend in an Albatros—he must have special tanks to get this far across the lines and back. Hurry up and fix Captain Kane's arm."

The medical officer started to sterilize the cut. He was almost finished when the roar of a fast-descending ship made the windows rattle. Denton peered out toward the field.

"Looks like Doctor Murdock's S.E.5. I suppose he's been making another experiment."

"Some fool test about night-vision," said the lieutenant irritably. "If it isn't some freak idea like that, he's always puttering around with that new ambulance plane. Lets me do all the work and he hogs the credit."

"He's your superior officer," snapped Denton. "Keep your tongue in your head, or you'll find yourself in trouble."

In sullen silence, the medical officer began to bandage Strange's arm. A minute later, there was a sound of foot-steps outside, and a tall man in a leather flying-coat entered the room. There was about him the crisply precise manner of a surgeon, and his carefully trimmed graying Van Dyke beard completed the picture. But not even his coolly professional manner could hide the fact that some intense emotion gripped him. His lips were pale, and as he drew off his gloves Strange saw that his hands were trembling.

CHAPTER V

DOUBLE MASQUERADE

"MURDOCK!" exclaimed Denton. "What's the matter? You look as though you'd seen a ghost."

"I've had an incredible experience," said the flight surgeon in a low voice. He hesitated, looked from Strange to Noisy Jay. "It was near Bourges, about forty minutes ago. I was flying just under a cloud, making a night-vision test, when a gray ship glided down almost in front of me. Denton, you'll think I'm stark mad—but the pilot of that ship was a *blue skeleton*!"

His assistant gaped at him, but Denton shook his head.

"You're not mad. I already know about that—the thing struck here about half an hour ago. The story will be all over Issoudun by midnight. You saw that flamer out there?"

"Yes, said Murdock, "but I didn't stop to find out what happened. You mean—?"

"Your blue skeleton brought it down," said Denton grimly. "It's obvious, of course, that it's some kind of truck. Skeletons don't fly Albatroses and fire machine-guns."

Murdock drew a long sigh of relief.

"I thought for a while I was losing

my mind." He picked up a scalpel, absently toyed with it while he watched his assistant bandage Strange's arm. "The ship zoomed back into the clouds almost instantly, and I began to think I'd imagined the whole thing."

"I reckon yuh wouldn't have had no doubts if yuh'd been in my Spad," Strange said drily. "Th' critter could shore gallop a sky buggy."

Murdock gestured to the Medical Corps lieutenant as the man finished tying a sling for Strange's arm.

"Wait in the front office," he ordered.

As the officer departed, Murdock turned to Strange. "You can come back tomorrow for another dressing."

His glance of dismissal included Noisy Jay, but Noisy did not budge.

"I'm from G-2, sent here to investigate this blue skull affair," he held the frowning surgeon. "Captain Kane, you'd better wait a minute. There are some points in your story I'm not clear about yet."

AS STRANGE halted, the telephone rang. Murdock put down the scalpel and started toward it, but Noisy reached it first.

"I'm expecting a call," he said. He answered, and by his expression Strange knew it was Tom who was calling. After a minute, Noisy put down the phone, a queer look on his face.

"Top that one!" he muttered. "Thiers just reported that a blue skeleton flew over the drill-field in a gray ship, twenty minutes ago and also threw its head down at the crowd."

"Busy sort of cuss, ain't he?" said Strange.

"This is no time for jokes!" Noisy said angrily. "Do you realize what it means? There's more than one of those devils. He couldn't have been all three places in the last forty minutes."

"That's what I was drivin' at," Strange said mildly. He leaned against a cabinet, fished out his tobacco and papers with his free hand. "Yuh get any other news?"

Noisy hesitated, turned to the flight-surgeon.

"Since you're in on part of this, you might as well know all of it. I've explained to Captain Denton that my brother and I were sent here to check up on Benny Todd. There was a blue skull mixed up in that case, too." And he described what had occurred at Toul.

Murdock listened with an expression of amazement. "I remember Todd," he said, when Noisy had finished. "He had trouble with the hearing test. I had him in the 'dark room' for an hour before I decided to pass him. But he seemed a harmless youngster—I never dreamed he could be linked with any kind of intrigue."

"We'll probably know a lot more in a few minutes," said Noisy. "My brother's found Todd's closest buddy, a fellow named Boone, and they're on the way over here in a car. From what I could make out, Boone knows something. He got scared when the blue skull was mentioned—and he hadn't had time to hear about these other things."

"Well, I reckon yuh won't need me any more," said Strange. "I better be moseyin' along an' findin' me a bunk."

"Hold on," interrupted Noisy. "I want to know why you took off so suddenly this morning at Toul."

"I got a sort of notion maybe if I was to get above them clouds I'd find me some Boche," drawled Strange.

"You were gone at least five hours," Noisy said suspiciously. "You hadn't come back when we took off. Where were you all that time?"

Strange shifted awkwardly from one foot to the other.

"Yuh shore can pin a man down. If yuh got to know, I was huntin' around down by them foothills beyond Luneville, till my gas was about to give out. Then I spotted three Fokkers an' if my tanks hadn't been close to empty I'd've barged into 'em."

"Where did you land?" Noisy demanded.

"Down to the Frog drome, at Epinal. Had some chow, gassed up, an' came back to Toul. Reckon yuh must've just took off. I run smack into th' general, an' after lambastin' me for takin' his car he sent me kitin' over here."

"Let's see your orders," said Noisy.

Strange produced them. Noisy read them carefully, looked at the signature, and handed them back.

"All right, you can go," he said in a disgruntled tone. "After this, I'd advise you to keep out of things that don't concern you."

"Reckon maybe I will," said Strange, and started out. But before he could reach the doorway, Tom Jay burst into the room, his face bruised and his uniform disheveled.

"They got Boone!" he shouted.

"Who? Where?" demanded Noisy.

"I don't know who—they jumped me just as the car stopped—slugged the driver and dragged Boone out. It was too dark to see their faces clearly—they waited till the headlights were out."

"Come on!" snapped Noisy. "We've got to find him. What's he look like?"

"Kind of skinny—he's got light hair and he's not very big."

Noisy whirled around at the door.

"Captain Denton, we'll need your help for this search."

"I'll get some men," Denton said hastily. And he ran to the phone.

Strange had pushed by Tom and was already in the outer hall. He opened the door, stepped out into the gloom and jerked the notched pistol from his right-hand holster. As the twins raced out, he jumped in front of them, the six gun grimly aimed.

"Keep quiet!" he rasped. "Get back over there behind that hangar!"

COMPLETELY STUNNED, the twins backed away, their hands raised. Strange drove them swiftly out of sight from the dispensary, keeping his gun lifted so that its blue steel shone dimly in the darkness.

"You'll hang for this, Kane!" Noisy said in a voice hoarse with fury, as they stopped behind the hangar.

"Brace yourselves for a shock, you two!" Strange said tensely. "I've got

a message for you from Colonel Jordan—it's about Captain Strange."

Both the twins were leaning forward startled by the sudden absence of his cowpuncher dialect.

"Jordan had to lie to you about Strange," the G-2 ace rushed on. "He was hurt—but he wasn't killed that night at Chaumont. He's been hiding—"

"Phil!" gasped Tom Jay. "Phil—it's you—you're alive!"

Noisy gave a cry that was almost a sob, and caught Strange's arm.

Strange lowered the gun. And he was moved by the tears that came to Tom's eyes.

"Sorry I had to do it this way," he said huskily. "But those devils forced my hand."

"Why didn't you let us know you were alive?" Noisy said in a shaken voice. "Al, this time."

"I know, old fellow—but I can't explain now. We're in a tight spot, all



three of us. Noisy, I want you to get to Communications as fast as you can. Show your G-2 credentials, and get a priority-rush phone call to Thorne or Jordan at Toul. Tell them to have the entire ace-patrol concentrated at Third Wing, as fast as possible. Give them this number—R-864—then they'll know you're working with me. After you get the call through, have a Communications wireless operator tune in on G-2's 'C' wave length and be ready to relay a code message to Tom.

"Tom, you'll have to work fast. I want you to get a ship with wireless equipment and take off at once. Circle at five thousand feet and follow the ship on which you get a signal. Noisy will be back here as soon as he gets the call through and the other part arranged. Now, Noisy, get this straight. Some one will come out of the dispensary and take off in the next hour, but not before the next thirty minutes. There may be one man—or several, in which case they'll have to use a large ship, or some two-seaters. No matter who it is—stay out of sight and wait until they're off, then phone Communications and they'll flash a code signal to Tom.

"Tom, you'll have to fly like the devil himself to keep in sight and not let your ship be seen—but you've got to find where those men land. As soon as you're sure, head toward Toul. Wait until you're at least thirty miles away before you use your transmitter. Then send the location of the place where they land, using the 'C' wave length and 'E' code. Jordan will be listening in, and as soon as he gets that signal, he'll flash word to the ace patrol. They're to wipe that place off the map!"

"But if you know this much—" protested Tom.

"I don't know. I'm only guessing—but if my guess is right, there'll be no time to work it any other way."

"You're taking some big risk—I can

tell it!" Noisy said anxiously.

"I'm okay," Strange smiled crookedly at them in the darkness. "Now remember, I'm counting on you. Sneak along behind the hangar and keep in the shadows until you're well away from the dispensary. I'll see you later."

He silenced their whispered protests, waited until they had vanished in the darkness. Creeping back to the end of the hangar, he watched until he saw a figure stealing along toward the rear of the dispensary. Without a sound, he followed, six-gun poised. The man before him halted, but before he could whirl around Strange jammed the gun in his ribs.

"Reach for th' sky!" he grated. "Turn around slow an' easy!"

"Kane!" spluttered a voice, and Strange recognized Denton's fat face, a round blur in the dark. The captain had a .45 at his hip.

"Reckon I'm a mite off-base," Strange said sheepishly. "I took yuh to be one of them polecats what made off with Boone."

"I was looking for them, too," Denton said, breathing hard. "You certainly startled me. Where are those twins?"

"Huntin' down along th' ackemmas' bunkhouse," lied Strange. "If yuh ask me, they could poke around all night an' not find th' ornery coyotes. Funny thing, I might've helped 'em out, if th' one that tagged along with me hadn't give me such a goin' over."

"What do you mean?" Denton said quickly.

Strange hesitated a second or two.

"Reckon I can't wrangle it alone," he mused. "But if I was to tell yuh, how do I know yuh won't try to grab all th' glory?"

"If you can straighten out this mystery, I'll see you get full credit," Denton said hurriedly. "You've found out something, then?"

"I shore have. But let's go inside, so we can talk private-like."

MURDOCK met them as they entered the dispensary. Denton looked questioningly at Strange. "We'd better have Doctor Murdock in on this, Kane, since he already knows so much about the situation."

Strange scowled. "I wasn't aimin' to tell th' whole Army. Howsoever, maybe it won't hurt none."

"Kane has a clue to the blue skull mystery," Denton hastily explained. "If we can talk without being overheard—"

"This way," Murdock said crisply. He led them back into the first aid room, closed the door. "Now, what is it? Did you find out who seized Boone?"

"Nope," Strange said laconically. "It's about this kid Benny Todd. Like I told yuh, I was at Toul when he cracked up. Fact is, I was th' second party to get to th' wreck. First one was a sky-hand called himself Brown—but I got a notion it weren't his right name."

"Why?" demanded Murdock.

Strange started to roll a cigarette, ignoring the surgeon's impatience.

"Main reason is, he was a Heinie. I spotted him sneakin' a paper out of th'

CHAPTER VI

THE TRAP

blue skull, an' I figgered right off he was a spy when he stuck it in his pocket. Like I told them smart-aleck Jay sprats, I always sort of hankered to catch me a spy."

"Never mind that!" snapped Murdock. "What happened to that paper?"

"Hold yore horses," drawled Strange. "I'm a-comin' to it."

Dragging out every detail, he described how his suspicions of the courier-pilot had led him to follow in the hope of establishing himself in the good graces of G.H.Q. Beads of sweat were standing out on Denton's forehead by the time Strange got to the contact with the Fokkers.

"What happened to the message?" he broke in hoarsely.

"Well, th' spy cracked up, an' he had th' paper on him—but don't worry, th' message weren't lost. That's what I was doin' all th' afternoon—I put down in a meadow close as I could get, an' went down into th' canyon. Mighty near broke my fool neck—"

"The message!" rasped Denton. "Let's have it!"

"Not so fast, pardner," said Strange. "I aim to be certain I'm not left out of " he stopped, gazing at the automatic which had almost miraculously appeared in Murdock's hand.

"Give me that message!" snarled the surgeon.

"Why, yuh double-crossin' rat!" erupted Strange.

"Keep still!" Murdock reached out and unbuckled Strange's six-gun belt. "Now, I'll give you five seconds to hand over that message."

"Yuh overplayed yore cards, mister," Strange said grimly. "It's hid in a safe place—an' I ain't tellin' where."

"Search him," Murdock ordered, and Denton hastily went through Strange's clothes. Eyes slitted, the G-2 ace watched the face of the man called Murdock. The make-up was perfect. Unless he had been on the lookout, he would never have guessed . . .

Denton swore under his breath as he turned the last pocket inside out.

"It's not on him, Karl."

Strange felt his pulses begin to pound. He was right! The false surgeon was Karl von Zenden—the Ace of a Thousand Faces!

"It must be hidden in his plane," the Prussian said in rapid German.

Strange let a look of ludicrous amazement come into his face.

"Heinies! Why, yuh dirty sneakin' coyotes—"

"Be still, *Schwein!*" von Zenden said furiously. He looked around for the scalpel he had toyed with before, and then, failing to find it, lifted his gun ominously. "Another shout like that and you will be dead."

"Shoot, damn yuh!" grated Strange. "Yuh don't dare—them Jay kids'll be back here pronto, an' a corpse'd be kind of embarrassin' to have around."

"He's right, Karl," moaned Denton. "And there's Boone, locked in the dark room. When he recovers his senses—"

"We'll have to get them both away from here," snapped von Zenden. "Send in Schneider and Brucken, and then order

the ambulance plane started. Most of the crowd will still be at the wreck. We'll take this blundering fool and Boone out on stretchers. While the engines are warming up, find Kane's Spad and search for the message. If you can't find it, put a time-grenade in it so it will blow up and burn the plane after we take off. We can't risk anyone's decoding that list—it had the name and present station of every agent-pilot we've put through this accursed school."

Denton disappeared, and in a few moments two fast-faced second lieutenants entered. They were the same ones who had been with Denton before.

"Gag this stupid pig and tie him to a stretcher," von Zenden ordered curtly. "Then do the same for Boone. We're taking them to the old field at Geranne."

TEN MINUTES LATER, covered with a sheet, Strange was carried out through what he guessed was the rear door of the dispensary. The stretcher was roughly shoved into a plane, pulling the sheet partly off. As his eyes became accustomed to the gloom, he saw that ambulance ship was a converted Handley-Page bomber. Another figure on a stretcher lay beside him, and the two spy-lieutenants were seated nearby.

"I couldn't find the message," he heard Denton say anxiously, then he saw the fat spy start forward with von Zenden. "So I set the grenade as you said."

"This peasant swine may have lied to us," von Zenden answered. "I'll get the truth out of him after we land."

He climbed into the pilots' compartment, and the Rolls Royce motors revved up for the take-off. Strange felt a shiver run down his spine as the ambulance ship swung into the wind. He had deliberately put himself into von Zenden's hands in order to ferret out the secret, relying on his wits to extricate himself. But if the Prussian ever penetrated his disguise, he knew this time he would be finished.

The ambulance plane roared into the air, climbing steeply. Strange gazed up at the dark-shrouded windows. Somewhere above Issoudun, Tom Jay would be circling, waiting. But even if Noisy had carried out orders precisely, it was going to be difficult for Tom to follow the converted bomber. It was a hundred and sixty miles to Geranne, and if von Zenden suspected he was being followed he could easily shake off pursuit by flying in the clouds for a while.

To get his mind off Tom's problem, Strange forced himself to recall what he knew of Geranne. Von Zenden had undoubtedly referred to the old drome of the 138th Escadrille, ten miles from Geranne, which the French had abandoned a year ago. A hangar and two or three shops had been left there, and occasionally the field was used as a reserve drome during an offensive, but the Allies had not occupied it for at least two months. It was evident that von Zenden had selected it as a secret meeting-place for the spy-pilots he and Denton had "graduated" from Issoudun into various American squadrons.

ON THE BASIS of what he had learned, Strange could fit in most of the Germans' scheme, though the blue skull angle still puzzled him. Obviously, von Zenden had managed to remove the real Murdock and had taken the flight-surgeon's place, delegating most of the work to junior medicos to hide his lack of detailed knowledge. Denton had probably been planted at Issoudun in the same manner, so that he could issue false service and pay records to cover the spies entering Issoudun as rookie pilots, while von Zenden handled the medical record phase. During physical examinations, it would be easy for the Prussian to slip any necessary information to the German entrants, who would then go on through the training course.

Once graduated from the school, the spy-pilots would be sent to various squadrons, where they would be able to absorb information, drop messages across the lines, and shoot down Yankee flyers when safe from observation. This was undoubtedly the answer to the killing of the American aces, as well as the leaks of information.

But something had slipped—and the key to it was the blue skull which Todd had been carrying to Toul.

Strange had a vague idea of what had happened, but that part was not important now. It was clear that the other blue skull incidents had been created by the Germans in a desperate attempt to distract attention from the Todd case and make it seem just one of several attacks by some Boche playing a fantastic role.

After a furtive test of his bonds, Strange gave up any idea of trying to free himself while in the ship. The big plane roared on for what seemed an interminable time. Boone recovered his senses, began to tug against the ropes which held him. The Boche named Schneider kicked him savagely, and Boone groaned, ceased to struggle.

Soon afterward, the motors died to a rumble, and the Handley-Page went down in a slow spiral. As the ship landed Strange caught the fitful blink of a light outside, then the big plane came to a stop. Several men appeared at the door of the cabin, but Strange could not hear what they said above the noise of the engines. Two of the spies dragged out his stretcher, carried him into a shop which had been converted into temporary quarters. A candle was burning, and he saw that the windows were heavily covered with canvas and burlap.

In a moment, Schneider and Brucken came in with the other stretcher, von Zenden and Denton behind them. At the Prussian's elbow was an ugly Boche who looked more like a dressed-up gorilla than he did a human being. He was the only one who wore a German uniform. Strange saw that his collar bore the stars of an *Ober-Leutnant*.

"Don't bother to explain, *Leutnant Munk*," von Zenden was saying icily.

"Save your breath for the court-martial board. I told you to drop the skull at St. Pierre—not Thiers. Instead of leading them to think the 'blue skull ace' was heading for the Front, you proved there were at least two of them. If their Intelligence gets to thinking very hard, they may guess it was a trick to draw attention from Todd and Issoudun."

"But the order said Thiers, *Excellenz*," groaned Munk. "Some one else made the mistake."

"I'll look into it later," rapped the Prussian. He motioned peremptorily to Schneider. "Untie Kane. I want him searched again. Cut the lining of his clothes and rip open his boots, also that gun-belt I took from him. The fool may have sewed it up inside."

Strange went cold as he listened. There was one place von Zenden had overlooked—his bandaged arm, evidently because he had been there while the bandage was being put on. If the Prussian found what he had hidden there, his chances of escape would be reduced to zero.

Schneider knelt and made quick work of the knots.

"*Hoch!*" he said gruffly.

Strange gave him a blank look.

"He's only an illiterate swine," sneered von Zenden. "How do you expect him to understand German?"

"I forgot, *Excellenz*," said Schneider. He prodded Strange with a Luger. "Stand up, dumb-head!" he said in English. "Take off your jacket."

THE G-2 ACE gingerly unfastened the buttons, took his arm out of the sling. The Boche roughly pulled the coat off. Strange winced, though the pain was not severe. If he could keep them thinking there was no danger from that arm . . .

"*Leutnant Munk*," von Zenden's sharp voice broke in on his thoughts, "have you the duplicate of the code list which was lost this morning?"

"*Ja, Excellenz*," replied the ugly German. "I am ready to return to Strasbourg with it."

"Never mind, I'll take it myself. I'll not risk—" von Zenden stopped short as someone pounded on the door. "Who's there?" he demanded.

"*Feldwebel Heintz*, from the wireless post, *Herr Oberst!*" said an excited voice. The Prussian opened the door, and a thickset man in khaki burst in.

"I just caught a message from Z-33, *Herr Oberst*. All the American ace patrol is being concentrated at Toul."

"*Himmel!*" Denton exclaimed. "They must be up to something. Karl, could those verdammte twins have tracked us?"

"Impossible!" snarled von Zenden. "They never had enough brains to trick me—and since Strange was killed they have been worse than ever. However, this is a chance we won't overlook. Brucken, have the bomb racks of the Handley-Page filled as fast as possible. *Gott sie Dank*, their Air Service refused to remove the racks when I converted the ship for our special use."

Brucken dashed out, two or three men

at his heels. Von Zenden whirled to one of the other spies.

"How many pilot-agents have been able to get here for the conference?"

"Seventeen," answered the Boche. "Five more were here, but they had to return to their squadrons, for fear it would look peculiar if they remained too long on 'patrol.'"

"Seventeen will be enough," snapped von Zenden. "Have the engines started. The Handley-Page will approach Toul first. Even if they turn a searchlight on it, they'll never suspect an ambulance plane. The fighters will approach at high altitude, and glide with motors throttled until in attacking range. The Handley-Page will drop its bombs, and the fighters will follow up with a strafe of the Third Wing headquarters. That's where the aces will be meeting with General Thorne and that pig of a G-2 colonel. We'll get them all at once."

Strange gave no hint that he understood von Zenden's rapid German, but his heart was like ice. If Tom Jay had failed, then Thorne, Jordan, and the ace patrol would be caught in the trap he had planned for Von Zenden's spy-pilots.

"Munk, you'll stay here," von Zenden said curtly, as the ugly Boche started out with the other pilots. "You can help Schneider guard the prisoners. I don't care to risk having you forced down with that uniform on. The whole scheme might be given away."

"I could wear the gown with the eye-holes," said Munk eagerly. "The one I used in the skeleton trick."

"You heard my orders!" rasped the Prussian. He beckoned to Denton, and strode out into the night. Munk glowered at Schneider.

"Fine business, doing jailer's duty."

"Keep this *Dunkopf Amerikaner* covered," responded Schneider, "while I go through his coat."

"Why not shoot him and be done with it?" demanded Munk.

"*Der Oberst* wants to question him," said the other, tartly. Outside, motors roared, settled into a steady thunder.



Strange stood against the wall where he had been shoved, his slitted eyes fixed on the six-gun belt. It lay on a table beside Munk, twisted so that one of the pistols was uppermost.

His bandaged arm hung limply at his side. Twice, when Munk's eyes shifted to Schneider, he gave it a twitch, and each time he could feel the hidden scalpel slide under the loosened bandage. He had stolen it from the dispensary to get von Zenden's fingerprints, before he was sure that it was really the Prussian. Months before, he had obtained a thumb print left by the impersonator, and this would have afforded a quick check-up. The quick change in events at Issoudun had made the check-up im-

possible, but he had kept the knife hidden in anticipation of its use in his desperate plan.

The gorilla-like Munk stood facing him, a Luger in one hairy hand, while Schneider tore open the lining of the jacket. After a moment, Munk's eyes flicked to the stretcher on which Boone lay. The rookie was still covered by a sheet, and he had not moved since he was brought in. Munk leaned over suddenly, jerked the sheet off. The gagged pilot stared up, his thin face white with terror.

The instant Munk bent over, Strange reached behind him and snatched the scalpel from under the bandage. Slight as the movement was, the Boche caught it. He jumped around, whipping the Luger toward the G-2 ace. Strange leaped aside as Munk fired, and like a flash of light the scalpel went hurtling through the air. There was a horrible, gasping sound as the whizzing knife buried itself in Munk's throat. The German's body twitched. Then he staggered and fell to the floor.

Schneider had spun around as the Luger crashed. He sprang frantically for the fallen gun, but Strange was on him in a split-second. A terrific right hook sent the spy thudding back against the wall. Strange slammed another blow to the point of his chin and Schneider toppled beside the dying Munk.

PULLING the scalpel from the German's throat, Strange hastily cut the ropes that held Boone. As he untied the gag, the youngster shrank back.

"Don't kill me!" he moaned. "I didn't do anything. Benny only swiped the skull from the dispensary for a joke—he was going to paint it and put it in our instructor's room to scare him when he came in from a binge—"

"I ain't goin' to hurt yuh!" Strange cut off the torrent of words. "Get on yore feet—we've got to move fast."

He buckled on the six-gun, wheeled and thrust Munk's Luger into Boone's hand.

"Todd must've found a spy-message in th' skull, while he was paintin' it," he told the frightened rookie. "I reckon he doped it out Murdock and Denton was spies, and they got wise an' was after him. That's why he lit out for Toul."

"Where are we now?" Boone said fearfully.

"Old Frog drome, near Geranne" Strange blew out the candle, took Boone's arm. "All yuh got to do, once we're outside, is sneak into then, woods back of th' hangar. Work along the edge to th' road, then make for th' village an' tell th' M.P.'s what happened"

He opened the door cautiously, saw the flare of exhaust stacks three hundred feet away. Boone scurried away in the darkness. Strange worked the fingers of his stiffened left hand as he stole toward the nearest ship.

His hands were on the butts of the six-guns when a flash of light abruptly halted him. Some one was illuminating the ground for the Handley-Page to take off. In the edge of the beam he

could see von Zenden preparing to don a hooded blue robe. Another Boche stood by him, holding a blue skull, with a strap-harness to hold it in place on the Prussian's head.

The spy-master slipped the robe over his head, adjusted it so he could see through the eye-holes. Climbing into an idling gray Albatros, he reached out for the skull.

MEANWHILE, Strange had crept on toward the nearest ship, a khaki-colored Nieuport. The pilot was a few yards away, talking with Denton and another spy.

The Handley-Page lumbered across the field, soared into the gloom. Strange was within ten feet of the Nieuport when the flashlight beam swerved to aid von Zenden in taking off. Denton jumped back in consternation as Strange was revealed in the light, and both the spy-pilots snatched at their pistols.

So fast it was almost a blur, Strange whipped out the six-guns. Flame streaked from both muzzles, and the two pilots fell. One wild shot blazed from Denton's automatic before the crashing six-guns dropped him in his tracks.

Strange holstered the guns, made the cockpit of the Nieuport in a flying leap, and sent the fighter roaring after the Handley-Page. Close behind him came von Zenden's gray Albatros, leading the spy pack.

Strange climbed at full speed. The next minute would hold the answer, for there was only one way he could stop the Handley Page. One hand on the flare-toggles, he watched the altimeter. Tracers shot past his wingtip, as von Zenden aimed at his glowing stacks. Strange flung a hasty look over the side, jerked both flares loose and dived.

Dazzling light burst out above him, and he saw the ambulance ship.

Wings screaming, he hurtled after it. A furious burst gouged his left wing, and another pounded into his cowl. He crouched behind his thrashing guns. The red-crossed wings of the ambulance plane were coming into his sights—but the whole spy pack was at his back!

But suddenly more flares bloomed overhead, and into their white brilliance hurtled the ace patrol! Like demons, the infuriated Yanks dropped on the panic-struck Germans. With a gasp of relief, Strange jerked his eyes back to his sights. His spraying Vickers drilled through the red-crossed wings, and with a violent detonation one of the bombs blew up. The shattered wreckage of the Handley-Page went flaming to earth.

Strange chandelied, shot back at the Albatros. Von Zenden was clawing at the blue skull, trying to rid himself of its betraying presence, as he raced toward the darkness beyond the flares. Strange pitched after him, the memory of that murder-night in Chaumont hot within him.

Von Zenden jerked around, the blue skull bobbing on his head as the Vickers poured their fiery burden into the gray ship's tail. Strange eased the stick back, guns blasting. The Prussian gave a wild leap and crumpled over his controls.

For a moment Strange thought he was finished, but with a mighty effort the wounded spy-master pulled himself up and fled into the night.

The G-2 ace zoomed above the flares, but the Albatros was gone. He turned, saw the last battered spy-ships trapped under the guns of the ace patrol. The Yanks had no need of him now. Banking quickly he flew South toward his lonely Vosges canyon.

THE FRAGRANT AROMA of Turkish tobacco filled the room. General Thorne looked down at Strange's bubbling water-pipe and chuckled.

"I guess that's a relief," he said, "after rolling your own."

Strange laughed. "It's a change, anyway." He glanced across at Colonel Jordan, then at the Jays, who were still goggling at the furnishings of his cavern hide-out. "Well, you two certainly came through with a vengeance."

"We didn't even know what it was all about," said Tom.

"Speak for yourself," snorted Noisy. "I had it doped out before you were half-way to Toul."

"Strange, I'm afraid these two boys may be in danger if von Zenden pulls through," Jordan said anxiously. "Do you think he will?"

"I think he was badly wounded," replied the G-2 ace. "And he'll be handicapped, with his spy-pilot group wiped out. But just to be on the safe side, I'll have Ling Foo fix up some bunks for the Jays down here for use in emergency."

"Good idea," said Jordan. "They can also act as go-betweens and save my coming down here. But remember, you young devils, no one else must know Strange is alive. Outside of here, he's Captain Tex Kane."

"No, I think Tex will retire from action for a while," said Strange. "He got a little too prominent in this blue skull case: I've a couple of other roles in mind."

"But he did a swell job," declared Jordan. "Hold him in reserve, anyway."

Strange grinned.

"Reckon maybe I will," he drawled. "Yuh never can tell when he might take a hankerin' to be a spy again. He kind o' likes the game."

National Air Race High Spots

(Continued from page 11)

one in the ship.

Steve Wittman and his "flying barn-door" had no difficulty in staying in third place at any time. As for Joe Mackey, he flew Roscoe Turner's Wedell-Williams right behind Chester's *Goon* for 18 laps without being able to pass Art. Beginning the 19th, however, he finally managed to whiz by Chester to take fifth place. Then he started after Leigh Wade, flying fourth. Wade, buzzing along quite high in the Military Aircraft Special—the rebuilt and remodeled version of Frank Hawks' *Time Flies*—saw Mackey pass him on the 24th lap, and he was forced to stay behind Joe until the last lap. Then, suddenly making a sensational bid, he passed Mackey by coming down lower and putting on a real burst of speed. Thus he regained fourth place, and roared over the finish line in that position.

After being passed by Mackey, Chester's ventilators collapsed, causing his Menasco to overheat and miss. This forced him to land after 20 laps. Joe Jacobson and his *8 Ball* then attained sixth place, which was conceded to him after 27 laps when all other ships were

down. Crosby, the only remaining competitor, caused no concern to the other flyers, since he did not even take off until the leaders had completed their first lap. Even then, landing gear trouble forced him to fly with his right wheel fully down. And when on top of it all exhaust gas started to get him, he landed after 10 laps.

A very fine looking plane that did not make an attempt to qualify was *Mr. Smoothie*. A great deal of money had been spent in its construction. But being completed just a few days before the races, it was not in readiness and so remained idle. It shows promise, however, and should be heard from again later.

When the Thompson contest began, the sun was very bright. But a bank of clouds soon took away the glare and reduced the temperature several degrees as well. This undoubtedly aided the pilots and prevented an occurrence such as that of last year, when blinding sun kept Turner from knowing whether he had rounded one of the pylons or not. To be sure, he went back. But this lost him time in the closing minutes, and being too much to overcome, he lost.

The Bendix cross-country dash was rather true to form, and complete results are shown in our accompanying table of events. Facing all kinds of weather and terrain, the Bendix flyers always find things quite different from those problems encountered by the closed course racers. It may be added that a new ruling this year prevented the same ship from flying in both the Bendix and pylon races, as was previously done by some pilots.

Roscoe Turner was the winner of the Henderson Meit Award, based on points won in the racing events. His total was more than that of Jacqueline Cochran because of extra points he garnered for himself by setting a new Thompson record. Crowds at the field set a new record also, with 110,000 in the stands on the final day. An extra crowd well over even that number saw the races that day from vantage points outside the fenced-in enclosure.

HOSTS of stunts and parachute jumpers entertained the crowds during the early part of each afternoon. In one spot-jumping contest, the winner,

Johnny Dunkle, came within 10 inches of the center of the circle—a very spectacular drop! Faye Lucille Cox and four men jumpers gave delayed drop exhibitions. What's more, special mass jumps by groups of some thirty "silk hoppers" literally filled the sky with chutes.

The German, Count Otto Hagenburg and Roumania's Capt. Alex Papana each performed in a Bucker *Jungfernstier*. Another foreign ship—the queer Fieseler *Storch*—boasted several groups of slots and flaps, some even being on the tail surfaces. Aided by these devices, it duplicated, with Emil Kropf at the controls, the antics of an Autogiro flying close to it.

Harold Johnson went through his popular bag of tricks in a ponderous Ford trimotor, then duplicated these stunts in a little Continental Special he built from a Laird biplane. Tex Ran-

kin, in his Menasco-powered Great Lakes special, operated a novel apparatus which ejected pink smoke. Thus he duplicated the dives of flaming ships as portrayed in the aero movie epic, *Men With Wings*.

On hand again, too, was Mike Murphy with a new show—that of landing and taking off from the dirt field in an Edo-float equipped Piper Cub! He also flew in a dual "crazy flying" exhibition with Capt. Dick Granere, who also did a solo act. Murphy's other duty was to lead the four Lanco Aces each day in their intricate sky-writing.

Gliding was likewise on the program, with a champion trio—Ted Bellak, Emil Lehecka, and Chester Decker—putting on a motorless flight display in sleek soaring craft. In addition, a German girl, Hanna Retsch, stunted close to the ground in a specially constructed

Habitch sailplane. And another German visitor was the four-engined Hamburg-er seaplane which flew across the field, then moored later in nearby Lake Erie. Had Mike Murphy been flyin' that ship, he would have tried landing it on the field, no doubt!

Army Seversky P-35's, and Marine Corps Grumman F3F-2's pirouetted in concise military formations, but the Navy was not represented, unfortunately, because mechanical trouble that could not be immediately corrected kept their ships at the home field.

Thus, the Air Races provided a thrilling exhibit for all comers, still holding their eminence as America's premier aviation spectacle. And next year will again see the Cleveland Municipal Airport as the stage for the National Air Races. So until then, fellows Happy Landings!

News of the Modelers

(Continued from page 51)

m.p.h., the matter was settled by drawing for positions.)

Junior Stick (Goodyear Trophy)—Don Kowalick, of Rockford, Ill.; Edwin Istvan, of Cleveland, and Arthur Beckington, of Rockford. **Senior Stick (United Air Lines Trophy)**—Edward Smith, of Washington, Pa.; Edward Naudsins, of Detroit, and Martin Price, of Rock Creek, Ohio. **Open Stick (Aero Industries Technical Institute Trophy)**—Len Becker, of Lakewood, Ohio; Leo Bailey, of Akron, and John Wulschlager, of Cleveland.

Senior Gas (Stinson Trophy)—Jack Deitz, of Cincinnati; Robert Hoffmyer, of Akron, and Edward Naudsins. **Open Gas (Texaco Trophy)**—Walter Good, of Kalamazoo; Carl Goldberg, of Chicago, and Len Becker. **Original Design (L. W. Greve Trophy)**—Tasso Pappas, of Akron; Ray Campbell, of Cleveland, and William Gusky, of Pittsburgh.

Exhibition Scale (Sperry Trophy)—Peter Zaleski, of Cleveland; Max Sokol, of Hamtramck, Mich., and Kenneth Bonesteel, of Kent, Ohio. **Flying Scale ("Men With Wings" Trophy)**—Richard Korda, Tofu Petratis, and Chester Lanzo, all of Cleveland.

More than 500 modelers participated in the Junior Nationals this year, and the affair was voted the most successful

in the five-year history of the Junior Aviators.

WINNERS IN N. Y. STATE MEET
HELD recently at the Syracuse airport in connection with the New York State Fair, a model meet sponsored by the Syracuse Model Airplane Club and sanctioned by the N.A.A. drew a crowd of more than 5,000 people. Winners in the various events were as follows:

Gas—Roger Desbrosses, of New York, N. Y., time 3 min. 10.8 sec; Larry Low, also of New York, 2 min. 11.8 sec.; Kale Harden, of Binghamton, 1 min. 31 sec.

Stick Event (Senior)—Robert Dillman, of Syracuse; Kale Harden, Robert Tracy, of Schenectady, and Phillip Fritz, of Hornell. **Stick Event (Junior)**—Donald Pratt, of Bainbridge, N. Y.; Patsy Fiumano, of Syracuse, and Donald Jochem and Edward Izzo, also of Syracuse.

Cabin Model (Senior)—Clement Buell, of Binghamton; Raymond Darling, of Utica; and Robert Tracy and Robert Fritz. **Cabin Model (Junior)**—Patsy Fiumano, Edward Izzo, William Etherington, of Watertown, and Donald Pratt.

Exhibition Scale (Senior)—Max So-

kol, of Hamtramck, Mich.; and Charles Hawley, Jean S. Chadwick, and Charles Cole, all of Syracuse. **Exhibition Scale (Junior)**—William Lacey and Jack Daugard, both of Syracuse.

The senior high point winner was Kale Harden. Patsy Fiumano was the juniors' top man.

Entered in the contest were 64 stick models, 69 gas jobs, 68 cabin craft, and 16 scale ships. Harry C. Copeland, of Syracuse, was contest director.

ALLENTOWN AFFAIR ATTRACTS 3,000
SPONSORED jointly by the Lehigh Aeronautical Society and the Lehigh County W.P.A. Recreation and Education Program, the annual gas model meet held recently at Allentown, Pa., was attended by a crowd conservatively estimated at 3,000. Nine different items were on the program which, besides the usual events, included awards for the worst crack-up of the meet, the best flying demonstration, stunt, or "circus" staged by an individual or a group, best club demonstration, and the individual or club traveling the greatest distance to the meet.

Mr. W. N. J. Weiland, N.A.A. contest director, directed the meet. The county recreation supervisor is Fred F. J. Waverek.

All Questions Answered

(Continued from page 24)

foreign manufacturer the rights to the YB-17—if such a purchaser appeared on the horizon.

Robert D. Dennis, Elmira, N. Y.:—Both companies you inquire about are now out of business.

Robert Entwisle, Brighton, Mass.:—To make a statement on the salaries of airline pilots would only be making a wild guess. But the average wage seems to be between \$4,500 and \$6,000 a year. On some lines the pilots are paid a base pay of about \$250 a month and in addi-

tion get so much per daytime mile and so much per night flying mile. I believe United Air Lines pays its pilots a standard salary of something like \$650 a month no matter what number of miles they fly or how many trips they make. This regular rate is paid whether they take out a trip or not; indeed, this scheme was devised to stop pilots taking out trips under bad weather conditions simply to get in more mileage pay. Thus the plan makes for safer flying.

Elsie Richter, Philadelphia:—Sorry, but we know of no one, off hand, who

would give you those Howard Hughes pictures "free gratis." Still, there might be some of you readers who have a few duplicates, and if so you can contact Elsie at 334 Passmore Street, Philadelphia, Pa.

Edward Zimmerman, New York City:—The Seversky Convoy-Fighter is an export type and, to my knowledge, has not been accepted by the United States Government. It is fitted for virtually any type of fixed gun, but the weapons used for demonstration were American Brownings of .30 caliber. The Seversky

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BUY IT - FLY IT - in ONE MINUTE

Construction Kits

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3/4" 12c	1" 14c
1" 14c	1 1/4" 16c
1 1/4" 16c	1 1/2" 18c
1 1/2" 18c	1 3/4" 20c
1 3/4" 20c	2" 22c
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61 1/2" 498c	61 3/4" 500c
61 3/4" 500c	62" 502c
62" 502c	62 1/4" 504c
62 1/4" 504c	62 1/2" 506c
62 1/2" 506c	62 3/4" 508c
62 3/4" 508c	63" 510c
63" 510c	63 1/4" 512c
63 1/4" 512c	63 1/2" 514c
63 1/2" 514c	63 3/4" 516c
63 3/4" 516c	64" 518c
64" 518c	64 1/4" 520c
64 1/4" 520c	64 1/2" 522c
64 1/2" 522c	64 3/4" 524c
64 3/4" 524c	65" 526c
65" 526c	65 1/4" 528c
65 1/4" 528c	65 1/2" 530c
65 1/2" 530c	65 3/4" 532c
65 3/4" 532c	66" 534c
66" 534c	66 1/4" 536c
66 1/4" 536c	66 1/2" 538c
66 1/2" 538c	66 3/4" 540c
66 3/4" 540c	67" 542c
67" 542c	67 1/4" 544c
67 1/4" 544c	67 1/2" 546c
67 1/2" 546c	67 3/4" 548c
67 3/4" 548c	68" 550c
68" 550c	68 1/4" 552c
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68 1/2" 554c	68 3/4" 556c
68 3/4" 556c	69" 558c
69" 558c	69 1/4" 560c
69 1/4" 560c	69 1/2" 562c
69 1/2" 562c	69 3/4" 564c
69 3/4" 564c	70" 566c
70" 566c	70 1/4" 568c
70 1/4" 568c	70 1/2" 570c
70 1/2" 570c	70 3/4" 572c
70 3/4" 572c	71" 574c
71" 574c	71 1/4" 576c
71 1/4" 576c	71 1/2" 578c
71 1/2" 578c	71 3/4" 580c
71 3/4" 580c	72" 582c
72" 582c	72 1/4" 584c
72 1/4" 584c	72 1/2" 586c
72 1/2" 586c	72 3/4" 588c
72 3/4" 588c	73" 590c
73" 590c	73 1/4" 592c
73 1/4" 592c	73 1/2" 594c
73 1/2" 594c	73 3/4" 596c
73 3/4" 596c	74" 598c
74" 598c	74 1/4" 600c
74	

We'll close by telling you that one of our new Canadian members—Marcel Franis, of Montreal—is a lad who should know all the answers. For he claims to have the largest aviation scrap

book in Canada. He has 2,550 pages of material collected in 21 different books, and it all deals with various phases of aeronautics. He's planning on starting an F.A.C. Flight in his locality, too, so

if any of you Montreal lads would like to tie up with a chap like Marcel, write him in care of GHQ and we'll forward your letters. And now—

Happy Landings!

Construct Our Gas-Powered Douglas O-41A

(Continued from page 43)

then cement the stringers in place. The space above the main frame between Formers No. 5T and No. 7T is covered with 1/16" sheet balsa. Cockpits are cut in after the sheet is cemented in place. If the modeler wishes, this entire section could well be made removable to allow easier access to the coil and battery.

In the test model of our Douglas O-41A, I used an Austin-Craft battery holder fastened to a pine strip 1/16" by 2" which was cemented to Former No. 7. Some modelers may wish to use the larger size holder fitted in a horizontal position, shifting it for flight balance.

My flight timer was installed just back of No. 7 former. The position of the timer, batteries, and coil will of course depend upon the weight of the motor used, the weight of the material used in the model, and other factors. The only sure method of locating them correctly is to complete the model (including the doping) before installing these items. The balance point should be approximately one-half inch ahead of the rear spar.

The No. 2½ and No. 3½ "formers" are cemented to the bottom stringers and covered with 1/32" sheet balsa to form the dummy radiator, the front of which is made from ¼" balsa cut to the shape shown on the front view (Plate 5). These radiators under the fuselage may be omitted from the model if desired.

The square between the No. 2 up-rights and cross-pieces is filled with a

piece of ¼" hard balsa in which is cut two ¼" by ½" holes for the motor bearers. If motors other than those mentioned are used, you will have to rearrange these holes and the corresponding ones in Former No. 1.

The centerline of the motor shaft should coincide with centerline of the fuselage. Pine bearers of ¼" by ½" stock are used for the motor mount. The motor may be screwed or bolted to the bearers. The *Trojan Jr.* is refueled from the bottom, so it is necessary to have the lower portion of the fuselage removable as well as the top. For the *Syncro Bee* motor only the top needs to be removable. In all cases it is well to have a few holes in the bottom of the motor compartment to allow the escape of gas and oil that drips from most power plants.

Propeller data need not be given here, since it varies with the engine used. Merely follow your factory recommendations.

COVERING

CONTRARY to the popular notion, silk is more easily applied than tissue. To apply silk, cement one end in place and pull the other end until the material is taut (but not too tight).

Pin it in place and stretch it side-wise, then adjust until all wrinkles are out and the threads are straight. Apply paper cement over the silk and press the material into contact with the rib or frame with your fingers. Only the outer edges of any panel need be fastened.

"Landing Fever"

(Continued from page 17)

to thoughts of the unfortunate crack-up on the week before.

Macklin knew that Jack couldn't help but associate that accident with landings, for it had been in landing that it had occurred. But if that idea got too firmly fixed, it meant a tough time for both Jack and him. He'd struggled with mental hazards before in students, and he knew what miserably incombustible things they could be. Consequently, even at the price of chronic hoarseness, he was making every effort to nip this mental hazard in the bud.

So he literally "talked" Jack around the field—talked him through every turn, through his glide, into levelling off, and, with some manual help on the stick and rudder, on to the ground.

"Hey!" he yelled an instant after the plane's wheels touched. "Stay on that rudder! Don't ever figure you're through flying until the plane stops rolling. . . . Look out!"

Even as he spoke the plane had start-

ed to swerve to the left. But Jack did nothing about it! With a muttered, "Damn!" Macklin booted right rudder hard and then was forced to give her a burst with the gun to prevent a ground loop.

After he had straightened her out and brought her to a stop, he twisted around and looked at Jack. The student's face was white.

The instructor smiled encouragement. "That wasn't bad, kid. No, not bad—except you kind of let down as soon as we were on the ground. But that's a common failing when a guy starts in on landings. He's concentrating so darn hard on making the landing that when she finally is on the ground his tendency is to sort of breathe a sigh of relief and relax. He forgets that he needs faster and more accurate ruddering immediately after landing than at any other time. . . . So just watch it next time, Jack. Stay with her and be on your toes until she's stopped—dead stopped. . . . Okay? Then let's try her again. . ."

Trim off when the adhesive is dry, and lightly sandpaper the edges. Spray with water and allow to dry before doping.

The model is doped with two or three coats of model dope. Correct colors are yellow for the wing and tail, and blue for the fuselage, landing gear, and struts. Stars and insignia are standard army colors and may be bought as transfers.

When assembling the model, cut the covering away wherever any strut or other part must be attached. The center-section struts are cemented to the fuselage at the start. Note the 1/32" music wire supports that run across the fuselage and up the struts to the spar or ribs, where they are cemented.

The wing is cemented on the center section struts. Care must be taken to install it at right angles to the fuselage. See that the angle of incidence is as shown on the side view. Cement wing struts in place. The windshield is made from celluloid over wire supports.

And now, if you have carefully followed these instructions and have used your best workmanship on the job, you will have produced a fine appearing flyer of great stability. However, if you should run into any difficulties during construction or flying, I'll be glad to help you with them. Write me in care of FLYING ACES Magazine, 67 West 44th St., New York, N. Y. And be sure to enclose a stamped, self-addressed return envelope if you wish a personal reply.

A TOUCH OF THE FEVER

FIVE LANDINGS they shot, but each time it was the same story. Jack's air work was reasonably good. His glides weren't bad. But when he got close to the ground, ready to land, Macklin invariably had to take a hand. It wasn't that Jack made the wrong move—he simply did *nothing*.

When it was all over and they had climbed out of the plane Macklin said calmly, "Well, for a first session at shooting lands that was pretty fair."

Jack shook his head miserably. "Don't kid me, Mac. It was terrible! Why, every time we got close to the ground I sort of froze up. Not scared exactly, but just tight—all over!"

"Shucks!" Macklin told him. "That's nothing. Probably never notice it next time. Just a little touch of 'landing fever' the aero equivalent of buck fever. Forget it."

At that moment, Mr. Conroy walked up. "How did he do?" he asked, catching Macklin's eye. "Looked fine from

where I stood."

"Okay," declared the instructor genially. Of course, learning the actual landing takes time. No one gets onto that without a lot of work and practice. But his air work was swell—his turns, glides, and approaches, you know."

"My air work!" echoed Jack heavily. "What do you mean 'my air work'? Why, you practically told me every move to make. That flying wasn't mine, it was yours. I was just a pair of hands and feet that you operated through that Gosport!"

The older men exchanged swift glances.

Then Macklin quickly laughed and clapped his student on the shoulder. "Ridiculous! It's one thing to tell a person what to do—and quite another to have him do it correctly. Now, listen to me: Cut out this silly worrying. You can master this landing business as easily as the next one. Why, just look at all the dubs who have caught on to it. But it takes time and practice. I warned you once before not to expect too much of yourself to start off with. You must simply do the best you can; keep plugging away at it and you'll have it saying 'Uncle' in due time. But fume, and fuss, and worry about it,

and it'll lead you a merry chase."

"That sounds like good sense," stated Jack's father. "And now, come on, son. We better be heading home. Get the car and drive it around here, will you?"

"WE'LL LICK IT!"

WHEN Jack was out of hearing, Mr. Conroy turned to the pilot. "What do you really think, Macklin?"

"That crack-up was a bad break for him, all right," admitted the instructor. "It's like a jack-in-the-box that springs up and shakes its ugly head every time he gets close to the ground. But we'll lick it!"

"I hope so—for Jack's sake," said the father.

"We will!" insisted Macklin cheerily as Mr. Conroy turned to get into the car which Jack had driven up. Then the instructor watched as the car sped away.

"We will," he breathed through tight lips, "somehow!"

How will "Doc" Macklin go about treating Jack's sad case of "Landing Fever"? Well, our eighth fictionized flying lesson will tell the story. Watch for it in our smashing January FLYING ACES.

Aces of Iraq

(Continued from page 20)

combined speed, dazzling color, unbelievable curves involving intricate maneuvers—and sudden death.

The Hellion, wild with the chase and the fight, was opened to her fullest. Crash took no chances on this new menace. His opponent knew how to fly. Twice, Crash only just evaded snap-shot bursts that fanged across his wing-tips or rudder. Again he made an effort to get his nose on the German fighter, but it slithered away in a side-slip. The man knew his stuff.

But skill and courage, combined with the superb flying mechanism which was the Hellion was to take its toll. Crash swung in hard, drew the stick back, drew a lever over a few notches—and held her there. The Messerschmitt was doomed!

The Hellion turned tighter and tighter, finally gathered the German low-wing fighter into its maw. Crash now pressed a cable trigger.

Two chugging streams of fire spat out, sending thunderous vibrations along the metal longerons of the nacelle. The 20 mm. stuff slammed into the all-metal fighter and like a Damascus steel blade hacked it into wreckage.

"Sorry," muttered Crash, as the Messerschmitt's gas tank exploded. "You saved my life in an effort to take it, if you get what I mean. But you stayed around too long."

The Messerschmitt plummeted down, its wings wrapped in flaming fluid and its fuselage disgorging black mushroom puffs of smoke. With a resounding crash, it slammed into the desert.

CARRINGER did not go down immediately. He sat back exhausted, now feeling the full effect of the double dash

of terror. First a Syrian viper loose in his cockpit, then an attack from a gun-bristling fighter!

"That guy at Bushire must have known something," he muttered. "When their snake failed to get me, someone else had a smack at me." And that freighter blowing off dots and dashes in funnel smoke? Could they have been tipping someone off about him? It seemed reasonable.

He wiped his forehead. There was no way like finding out for sure. He'd land on the desert and see what there was to that wreckage. There was no one anywhere near the crash. Nothing but mile after mile of wide rolling desert land.

He selected an even rolling stretch that ran toward the wreck of the Messerschmitt, and soon the Hellion was swishing across the sands. With a light pressure of the brakes, he drew up within ten yards of the pile of twisted dural.

Crash sat there a minute, his elbows resting on the cockpit coaming. Then, remembering the viper, he disgustedly leaned down, drew the foul thing out, and hurled it away. It was fully five feet long. The battered head was in another corner and he forked it out with two empty 20 mm. cartridges and dropped it over the side.

Then he peered inside again, wondering how they got the viper there in the first place. And soon he spotted a small decorated basket fitted with a loose lid. It had been placed between his seat and the forward oil tank.

He drew out the basket, studied it. The lid fell back, hinged on a strip of raffia. Inside was a small nest of stringy hay mixed with grayish horse-hair.

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The decorations around the sides of the basket intrigued Crash, for they were well done, evidently the work of an expert desert craftsman. The design took the form of a large snake which completely circled the widest portion of the side, and in the open mouth of the serpent was a strange, double-curve bladed sword or scimitar.

"Very interesting," agreed Crash, putting it back. "And I wonder what it all means? I've never seen a sword quite like that before. Very interesting!"

He climbed out and walked over to the wreckage which had struck hard. Part of one wing still remained, the other had floated fully a quarter of a mile away.

Crash was not able to get very close to the fuselage, owing to the heat, but at once he noticed that along the twisted portion of the remaining wing was exactly the same design that he had noticed on the snake basket!

He whistled under his breath, and tried to get closer. But the poor devil inside would be burned to a cinder, and there could be no hope of getting anything that would help in solving this new mystery. There was nothing except the strange design of a Syrian viper carrying that strange double-curved sword in its fangs.

"What the deuce do they call those swords?" Crash asked himself, trying to fathom the significance of the strange insignia. "They do have a name, and I think I've heard it. But somehow I can't put my tongue to it."

Finally he decided that the sun was getting past noon fast and that he had better hurry on toward Baghdad if he hoped to make Rutbah Wells that evening.

With a last glance at the burning Messerschmitt, he climbed in again and gave the Allison the gun. The Hellion took off smartly, sending back a giant plume of sand, and climbed away fast. Crash tucked her wheels up, hooked "George" in again, once he was at 4,000, and set her for Baghdad.

The famous Persian airport came into his vision within an hour—an hour given up to serious contemplation and consideration of the general situation. Crash knew of the trouble that had been brewing in Iraq, once known as Persia. He'd seen reports in newspapers from Hong Kong to Peshawar, and he wondered if any of it had anything to do with the Messerschmitt, the old freighter that signalled with its funnel smoke, and the basket containing the viper.

He knew of the troubles that were besetting the British in the area—the old racial and religious wars that flamed out at every corner, in every bazaar, and around every oasis. Moslem and Hebrews, mobs and raging tribesmen . . . bombs, knives, and pistols hidden in gaudy belts . . . riot acts read by British officers in shorts and topees . . . fatwa rulings issued by ecclesiastical authorities . . . notices quietly plastered on muddy walls concerning the activities of Iraqi Arabs and their participation in a Jihad—a Holy War. Yes, there were a hundred and one signs of revolt.

Yet again he asked himself how the

snake basket, the dirty freighter in the Persian gulf, and the skulking Messerschmitt figured in the picture.

THE AIRPORT at Baghdad West is unusually modern for one set so far away from the teeming of western civilization. It has a long administration building housing airline offices, waiting rooms, a small but efficient hangar, a Customs depot, and a central Control office with a radio station set in the tower.

The runways are composed of packed sand in which a certain amount of powdered cement has been sprinkled. There is plenty of room to get in, and Carringer had no trouble in putting the Hellion down. He taxied the plane past an airliner out of Karachi and another out of Rome. The usual amount of indeterminate activity went on without pause on the apron.

Carringer finally ran the Hellion up to the railed-in portion to check with the Customs officials. A group of mechanics and a handful of Iraq Air Force men uncomfortable in European breeches and stiff military caps moved up to inspect the machine. Crash "signed in" with the airport deputy and gave orders to a mechanic in a greasy K.L.M. jacket to see that the Hellion was checked and re-fuelled. Then he headed for the Customs office to have his papers stamped.

"They've certainly made a neat place of this," Crash agreed staring about.

"Baksheesh! Baksheesh!" a scrubby looking mendicant wailed, holding out a dirty claw and chanting the aims wail of the East. "Baksheesh from the generous airman. Baksheesh for a humble Moslem Baksheesh!"

The beggar's hand came over the rail and followed Crash as he went toward the shed. "Baksheesh!"

"Buzz off," growled Crash who was used to this sort of thing.

"I shall be waiting for baksheesh near the watering tank at the far end of the aerodrome," the man said in a low firm voice. Then he wailed again aloud: "Baksheesh!"

At this, Crash slowed up, glanced out of the corner of his eye. The beggar was eyeing him under a shaggy turban. The eyes were pleading, yet strong in character.

"What's the idea?" Crash said out of one corner of his mouth.

"Baksheesh!" wailed the man aloud again. Then he added under his breath. "It is about the Yataghan of the Desert. You have escaped him."

"Who the devil are you talking about?"

"You still have the basket? The basket in which they placed the viper?"

"What do you know about it?" whispered Crash, fumbling with some change so as not to attract attention.

"The basket! It is still aboard your ship? It is most important. I am Burge—Captain Burge of the British Foreign Department. It's most important, since the Yataghan and his Vipers of Vengeance are about to strike. The whole of Iraq may be a shambles within a week."

"I'll be right out," Crash whispered.

"You go over to my ship. The basket is still behind the seat; see that no one takes it. . . . Here, buzz off," he added in a louder tone as he dropped a couple of coins in the outstretched hand.

The disguised British intelligence man shambled off, holding his stained claws before him and bowing as he backed away.

THE IRAQ Customs man was pleasant, but it was obvious that he was worried about something. He went through Carringer's papers in a routine manner, stamped them with but a few questions.

He spoke perfect English and was obviously a cultured man. "Have you met any other machines of a military type since you left Bushire?" he asked in a friendly tone, giving a quick glance about the room. A sloe-eyed sentry stood at the door, a Martini-Henry carbine cradled in his arms.

"What answer do you want?" asked Crash cautiously.

"We are worried. You have seen foreign military planes in this area?"

"I've seen a Messerschmitt and a freighter that sent out signals with its funnel smoke," Crash said then, hardly allowing his lips to part. "That was near Banda Dilam."

"You were attacked?"

"Go take a look at my bus."

"You drove the plane off?"

"Down! It had the insignia of a snake with a sword in its fangs. Mean anything?"

"You know more?"

"No. He burned. Nothing left to get at."

"Good. I'm glad you escaped. Only one, you say."

"That was enough. And what's the story? Something wrong up here?"

"Well, we are not sure of the real story. Still, something is wrong—something we can only sense, not feel or see."

"Well, I'll be shoving on. I'm heading for Rutbah Wells. How's the weather?"

"The Meteorological Office will be glad to accommodate you on that. I'm simply Customs. You'll find them upstairs."


"Thanks! I'll shove off then. Everything all right?"

"Everything in order. Thank you and a pleasant journey."

Crash gave him a friendly salute and wandered out. The Hellion was drawn up to a portable refuelling car which was covered with wads of wet burlap for protection against the hot sun. He stared about and saw the beggar guy squatting on his heels near the ship. He wandered over to it and casually climbed in, as if to check the refueling.

The basket was where he had left it. He took it up, dropped down on the wing, then started to saunter across to the beggar. The instant the man saw him, he arose, turned, and walked away toward the arched entrance to the main hall. Crash followed him.



There were three autos drawn up near the front door, and the beggar headed for one of them and quietly slipped into the front seat. Crash, with a nonchalant air, followed and took the other side of the car seat.



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Without a word, the beggar grabbed for the basket. He studied it a minute, then smiled.

"The Yataghan's insignia, all right! You were lucky. How did you get away with it?"

"Look here," argued Crash. "All this may be interesting to you. But me, I'm out on a limb. What the devil are you talking about?"

"See that sword?" the Englishman said pointing to the design on the basket. "That's a Turkish Yataghan—a double-curved sword. They call Rasheb Bey Hasnabi, the 'Yataghan of the Desert.' He's the head of this new 'Vipers of Vengeance' order, a Nationalist Fatwa mob which is trying to overthrow the present government and bring back a sort of Arab-Moslem regime with all the old tribes, customs, and general desert feuds. A lovely prospect!"

"Some more bomb throwing in the bazaars?" asked Crash.

"It's much worse than that. Petty riots can be handled by the constabulary. What this may turn into will take an army—and an air force to stop."

"Who is this sword guy? This Yata-ghan bloke who has his friends bumped off with snakes in baskets?"

"He happens to be a warrior of considerable experience. He fought with the famed Colonel Lawrence, figuring that he could make certain land grabs for his people, but the Treaty of Versailles let him down and he now plans to take it out on the British via an Iraq revolt. He's mad enough to believe he can take control of Iraq, make a tie up with Turkey, and eventually provide an air route from Berlin to Baghdad and perhaps even to India and Malay. Actually, he's one of the world's greatest menaces—as far as the peace

efforts of the British are concerned"

"He had a Messerschmitt out there today. He must be getting some assistance from Germany, eh?" reflected Carringer.

"He has more than that. He commands the dread 'Aces of Iraq'—a complete air force—somewhere out there in the desert," replied the British Intelligence man nodding toward the northeast. "He also has a regular camel corps, several thousand strong, all well armed and mounted. And that's why I wanted the basket."

"The basket?"

"Yes! You see, you were being used as a messenger by Ali Mehta, at Bushre, to deliver certain information."

"I still don't understand"

"Look here," smiled the fake mendicant, fumbling in the basket and turning up the packed hay and hair. "See! Here's what they were trying to get through."

He brought out a folded sheet of buff colored paper on which was carefully engraved by hand certain Arabic figures and characters.

Crash looked at it, turned it over, and handed it back. The disguised Englishman, smiled and explained further.

"You are not the first who has had a Syrian viper planted on you. The idea is to get these messages out of Bashire and into the desert. The basket is planted in your cockpit and it is made so that certain temperature changes cause the woven lid to contract and leave the top open. Then out comes the viper who gives you a nip when you're not looking—and you only live long enough to snap the switch and go down. The Arab flyers come along in time to see you crash. They then land, take out the basket, and send the information on through."

Crash was studying the basket now, and he could see how the lid fitting tight when it was damp and cool, would curl up and open once it became dry as the result of the heat inside a corknif.

"And the message? Is it important?"

The Englishman was reading it carefully, plucking at his lips with his forefinger. Abruptly his staid brow furrowed, and he became tremendously excited.

"Good Lord!" he said. "They evidently plan a raid on something—somewhere—today! Or tomorrow! This damned desert Arabic is worse than a mixture of Cockney and Lancashire."

"Anything I can do?" asked Crash

"I don't know wait a minute." The Englishman sat bowed over the strange message. "I think I see it now. I think it means that the Yataghan is to strike from—"

Before the Intelligence man could finish his sentence, something crashed out behind them. Crash ducked but sensed that the Englishman had fallen forward.

A car, roaring into second gear, crunched up from behind and passed them. There was another crash and windshield glass showered down across Carringer's back. A dozen more shots literally blasted the top off the car. Then a cloud of dust, a torrent of hurled cinders from the spinning wheels—and the car raced away, to cut across a lawn and disappear through a high hedge.

CRASH quickly sensed what had happened. Enemies had recognized Burge, had trapped him from the car behind! The Englishman lay in a heap under the steering wheel of the car. Car-ringer forced the battered door open, lugged the wounded man out.

"Sorry," the Englishman said. "Sorry to get you in a mess like this. I'm done, I'm afraid. My own fault, not on the—on the alert."

"The message!" husked Crash. "What did it say?"

"The Yataghan!" muttered Burge. "He's going to attack Rutbah Wells . . . attack it from Thumail Najaf . . . that hellhole of the desert. I should have remembered that spot. Might have . . . might have known . . ."

"What do you want me to do? Warn the men at Rutbah Wells?"

"You can't—unless you can get through yourself. They have all the telegraph lines."

"Radio?"

"They'll jam it from Thumail, the swine!" the Englishman growled weakly. "But you might get through . . . about 300 miles. You might . . ."

"Where's this Thumail Najaf you mentioned?"

"Directly on your course . . . if you go. On your course . . . to Rutbah."

Crash nodded, and by this time a crowd from the Administration building was gathered about the dying man. A siren screeched, and an ambulance came crunching out of somewhere behind the big building.

Crash tried to explain to the men what had happened. Finally, a British airline official saw that the best medical attention available was administered, but they all knew the unconscious Burge could not survive.

It was some time before Crash could get clear of the circle of excitement and stand off. The babble of tongues, the heat, and the pungent mixture of tropical desert smells only aided to his problems.

What was he to do about all this? How much of Burge's story could be accepted as authentic information? How much had been devised in a shot-shocked brain? Machine gun slugs thudding into a man's body are not conducive to clear thinking.

They were still asking Crash ques-

tions as he tried to ponder the general situation. He was answering automatically, nodding, agreeing, and starting off into space.

"Bit of an upsetting experience, wasn't it?" someone said nearby.

It was the British airline official, a florid man seemingly bulged with British raw beef health. He wore a topee, gray shirt, and the inevitable shorts.

"I'm still getting over it," agreed Crash.

"Better come over to my rabbit hutch and have a spot. You probably need it."

"Thanks, I will. I'd like to talk to you anyway."

They passed around the main building, crossed a concrete path, and entered a stone shack that flew the Imperial Airways pennant. Inside, Crash noted the usual British smartness, efficiency, and Empire-building stolidness. A neat office, a telephone, a calendar, a few old but still smartly dressed files banking one side.

"That bloke was an Englishman, wasn't he?" the Imperial man said, pushing a whiskey and soda toward Crash.

Crash nodded.

"Queer. I've seen him around here for weeks. They've kicked him off the aerodrome several times. Must have been waiting for you, eh?"

"Perhaps," said Crash, trying to figure the new interrogation. Then he decided to try a new tack: "Ever hear of a guy by the name of Rasheb Bey Has . . .?"

"Rasheb Bey Hasnabi?" the Imperial guy broke in—his florid face turning gray. "You think he was after Rasheb?"

"No, I guess it was this Hasnabi guy who was after him—and got him." Crash said coldly. "The devil who killed him like that ought to be strung up!"

"I agree! Terrible thing!" the Imperial Airways man said quietly as he studied Crash. "Here, let's have another drink."

He reached his right hand forward and clasped the brandy bottle—and as he did Crash started. The forefinger of the man's hand! It bore a narrow, oily blue mark between the first and second joints. Not only that, but tiny pitted spots of gray-blue were burned into the flesh between the base of the thumb and the base knuckle of the first finger—the trigger finger.

Carringer knew that only one weapon in the world left its tell-tale mark like that—the German Krupp-Mausier automatic riot gun. The "spitting bull-whip of the Black Shirts!"

IN THAT SECOND, Crash Carringer knew who had killed Captain Burge! And in that same second, the Imperial Airways man knew he had been discovered.

The two men sat staring at each other through slitted eyes, the brandy bottle pouring its contents in bubbling gushes over the edge of Carringer's glass. Meanwhile, the man's left hand was fumbling with another drawer. So Crash quickly reached forward, grasped the glass—and threw the brandy full

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Crash climbed into his pit, sat watching the four-engined monster come in like a flying houseboat. He smiled grimly, realizing that a dead body would greet the crew when they forced the entrance to the Imperial Airways office.

Crash sniffed as he glanced through the much-thumbed booklet. Just how much could they take if they were suddenly pounced upon by an armada of Messerschmitts and possibly Arados and

[illegible]

Heinkel two-seat fighters.

Crash mumbled to himself: "Perhaps I'm a sucker for slaying in this. One adjustment on 'George,' and I can cross into Arabia, make my way up to the Trans-Jordan area—and safety!"

But he sniffed again, sucked his bruised knuckles—and remembered the events that had just happened at Baghdad. He hated treachery and bullets in the back. He hated the force of mad might and the planned bloodshed of wild desert tribesmen.

Making a quick decision, he headed straight for Rutbah Wells! He'd told that devil at Bushire that he was going through. He'd promised Burge he would try to get through. He had to get through to save Rutbah Wells from the raid of the Yataghan of the Desert and his Vipers of Vengeance.

He squinted his eyes through his gunport slits. And soon he saw the vengeful army of death—the Yataghan's camel corps threading its way through the undulating dunes, a heavily-armed parade of desert demons fully two miles long! The sunlight flashed off their sword blades, glinted from the polished tripod mountings of their gun teams.

"Judas!" gasped Crash. "They're on their way. Thousands of 'em!"

He watched as the cavalcade of doom padded with swiny loping strides across the blistering sands. It wove in and out like a monster snake, threading through the palms, over the mounds, and down the blinding white valleys.

Crash knew something had to be done—but what? And how?

"Those thugs will be into Rutbah Wells by nightfall," he muttered as he checked the position. "They'll speed up, too, when it gets dark. I'll bet they'll time it perfectly so that their aircraft will arrive to batter the Iraq flyers just as they get into the air for action."

Something had to be done!

CRASH CARRINGER decided upon a bold plan. He cut out "George," took over, and turned back. He knew he had to work fast; for the present favorable conditions would not last long. He studied the ground below and took up the trail of the camels. With luck, he might be able to follow it all the way back to their hidden base. If only the wind would hold off until sunset, he might get away with his scheme. He picked it up.

Then, as he roared back over the trail of the desert devils, he grabbed his radio head-set, plugged in, picked up the hand mike, and began calling:

"Rutbah Wells . . . Calling Rutbah Wells . . . Emergency call to R.I.A.F. at Rutbah Wells. Can you give me QTE?"

Getting a quick reply, he hurriedly started to tell of the camel corps movement. But before he had uttered ten words a terrific "jamming" filled the air which almost deafened him. He hung up grimly, but kept his switch in, hoping that the Rutbah Wells operator had heard his QTE—his request for his true compass bearing from the Wells. If the operator caught that, he'd be able to direct the Iraq flyers to where he was. He waited, tried again, but the jam-

ming was in hot now. Disgusted, he finally gave up and bent his full attention to following the tracks of the camel corps.

The trail wound tortuously over the dunes and through the folds of desert. At times, it was difficult to follow in the uncertain afternoon light, but by careful S-turning back and forth to study the ground from various angles he was able to make progress.

Then, about twenty miles from where he had picked up the camel corps, he sighted a raised something that glowed with a strange, grayish tinge. Rocks? A thicketed slope? It might be anything.

Before continuing, he tried the radio again. But the jamming broke in once more, this time louder than ever. He ripped the earphones off with a growl, stared ahead again.

Rutbah Wells must be at least fifty miles away. And Palestine, where hope might be found in the concentration of British Air Force Squadrons, was fully 350 miles off. The chances of help were not even slim.

"I'm crazy! I'm a sap!" Crash argued with himself. "Why should I get mixed up in this trouble? A lot of dirty Arabs and desert tribesmen holding their annual cut-throat harvest! What's it all to me? I'm an American, and—"

That got him—the reminder that he was an American. Americans weren't quitters—and he couldn't quit now, after that struggle in the airways office at Baghdad. Crash glanced over the Hellion. He had 1,000 h.p. behind him. He had at least 500 rounds of 20mm. stuff in the fixed cannon and plenty of .50 and .30 caliber stuff in his wings for emphasis. And hadn't he always philosophized that people who sought security usually wound up in convalescent homes or in wheel chairs?

He tightened his belt, made certain that everything was ship-shape and ready for action—and plunged on!

The strange something ahead now turned out to be a curious, and particularly ugly rock formation. It was flanked and tufted with scraggy palms and desert brush. A careful inspection, however, brought out certain details to Carringer's trained eye—the narrow engineers' poles, probably stolen from some British outfit during a raid, the glint of stranded copper wire, where radio aerials had been strung up, and circular arrangements of rock which he figured must conceal guns. These and a dozen other details evidenced that this was a large native stronghold.

"I get it," muttered Crash. "Caves sheltered by palms. Sure! And there are several planes in there, too. Maybe ten. I picked something here, all right!"

He circled over the desert fortress to draw their fire and get his excuse to open hostilities. Now he saw a couple of planes being drawn into position where they could be run out of the narrow gorge between the two main projections of rock. Carringer's eyes glinted. Here was his opportunity!

A chatter of gunfire spattered up from one of the circular holes below, and Crash could see the spitting muzzle of a snub-nosed Vickers. He circled

tighter, slid into a wing over, and let them have a fairly long burst.

Then all hell broke loose!

A dozen concealed A-A guns opened fire at once. And whatever ideas Carringer may have had about trapping the planes inside that shelter were quickly battered out of him. He had to race away to set himself again for a smack at them from another angle.

Two Messerschmitts were now crawling down the gorge to get into the desert for a take-off, and Crash quickly thundered across the desert fortress and poured a long retching burst at them. The first got into the clear. But the second, its cockpit shattered, stopped half way out and a number of natives rushed toward it.

"There's one," snorted Crash. "About nine more to go, I suppose."

BUT his elation was short lived. "I'm afraid I stepped into something," he reflected a moment later as the gunfire from the ground got hotter. But there was nothing to do about it now. He could only hope that he could hang on, praying meanwhile that the Rutbah Wells operator really had made something out of his radio attempts.

That thought brought him to consider another try at the radio. The Yataghan's hirelings were so busy getting the planes out and manning guns against him they might even be using the guy who was jamming the air.

Crash snapped in his radio switch as he watched the men in the gorge run the second Messerschmitt out into the clear. Into the mike he barked:

"Calling Rutbah Wells . . . Calling Rutbah Wells . . . Engaging air force of Rasheb Bey Hashnabi over desert stronghold at Thumail Najaf . . . Need all available assistance . . . Carringer speaking . . ."

The first Messerschmitt was climbing toward him, and Crash had to give his attention to the attacker, who was now trying to stand on his tail and pepper him with short snap shots.

The Hellion nosed down, and Crash, drawing a smart bead, pulled the firing lever back.

BRRR-R-ONG! BRRR-R-ONG!

Crash's thudding burst of 20 mm. stuff caught the fighting craft full in its Yataghan insignia. The fusillade broke the fuselage in two, and the front portion seemed to leap away from the shattered tail. Then the wreck twisted over, spun flat on its back, and finally broke up in mid-air with a terrific explosion.

"Two finished off!" checked Crash, nosing over and again fanning the gorge with 30 caliber stuff.

There was plenty of action now. But the bitter gunfire from the rock emplacements continued to be too heavy for comfort. Crash had to swish back and forth awaiting a chance to get in a decisive blow.

Indeed, he waited too long—for before he knew what was up, three more Messerschmitts rolled out of the gorge, took off on the run, and screamed into the air in a *fleur de lis* fighting formation.

Crash realized he was in for it now!

Without further investigation, he thundered into action and blasted away at the center ship with a whiff of .50 caliber stuff. Meantime, the right-hand ship pivoted on its wing-tip and came crashing at him, its nose guns sparking.

Crash quickly pressed his rudder pedal, yanked his cannon lever—and the oncoming Messerschmitt disintegrated in mid-air! Before his eyes, a gigantic handful of broken members, parts, and bits of metal sprayed against the low glare of the afternoon sky.

"Three to my credit!" muttered Crash, whipping over smartly to avoid the battering directed at him from the other side.

But directly beneath him two more Messerschmitts now slithered into the sky. "Guess I bit off more than this Hellion can chew," Crash growled. And knowing that he now had to work faster than ever, he slammed in and out, opening fire on every Yataghan insignia that came into his view.

One Messerschmitt wobbled down as with a heavy burst of fire he played Hell's Anthem through his wing near the root. But how long he could fight off such a powerful opposing force was a question. For what seemed hours he kept one foot pedal down, the stick well back, thus flying in an ever-tightening circle. The Messerschmitts, which seemed to have multiplied into an Armada of more than a dozen, were equally as frantic in their efforts to shoot him to pieces. Only the terrific speed of the Hale Hellion kept it in the sky at all.

But Carringer had the sense to know that sooner or later two of the enemy would converge on him, and by the law of averages, a burst would find a vital spot either in the ship or in his own tense frame.

From below, heavier stuff was being flung up at him. The sizzle of machine gun fire was now souped up with three inch high-angle explosives whose detonations bounced him from one circle to another.

He gasped, fought for breath. He ached from the base of his skull to the calves of his legs. He perspired in rivulets that coursed down his spine and drew murky marks across his chest. But somehow he managed to keep fighting back, pressing trigger controls and cannon levers every time a taper-winged fighter crossed his line of flight.

Then a new menace thundered into the picture! Three particularly gaudy Messerschmitts came out of nowhere. Flying at him like three automatic weapons guided by a single hand, they sprayed the path of the Hellion with streams of zipping slugs.

Crash swore. He knew that this was the Yataghan of the desert himself!

For only a leader would fly a ship decorated like that. Only a leader could command the respect of two wing-men to stay with him through the cruel series of maneuvers and fighting tactics that now vengefully evolved before his eyes.

"I guess I asked for this," muttered Carringer. And he drew his homely features into a terrible mask of hatred—the mask of a wolf backed into a corner.

THE UPPER CORNER of his lip curled back as he swung into a new series of tight circles. He had to conserve his ammunition now, but carefully delivered short, deadly bursts at anything that offered a target.

At least, he would go down fighting. He would not surrender, knowing the torture practices of the desert devils who huddled in the rocks below. It was a fight to a finish now, and while he knew the task was hopeless, he decided to go through with it and take as many of them with him as he could.

He forgot the other dozen now and concentrated on the three-ship flight headed by the Yataghan. The gaudy leading Messerschmitt with its insignia of a gold adder bearing a jeweled double-curved sword in its fangs. That was Crash Carringer's goal now.

"I'll get you—get you if you're the last guy I ever get!" he snarled, making a quick adjustment on his flaps and prop.

The adjustment gave him a new degree of slow speed and enabled him to turn inside the three-ship formation and worry them with snap-shot bursts. This was the end—but he intended it to be a fighting finish.

Then something abruptly tumbled in front of the Hellion, and he only missed colliding with it by a few feet. It was a Messerschmitt with only one wing left. It cork-screwed down, threw away the other wing a hundred feet from the ground, then piled into the desert with a resounding Crash.

Carringer blinked. But amazed though he was, he had no time to ponder. He took another shot at the Yataghan, made him swerve. Then he flashed back—and only just missed hitting another ill-fated Messerschmitt that came down in a smoking ball of fire.

"What the devil?" snarled the American! But again he had to cut in against the Yataghan. He sped a short burst at the rebel, then let him have three blarts of cannon stuff.

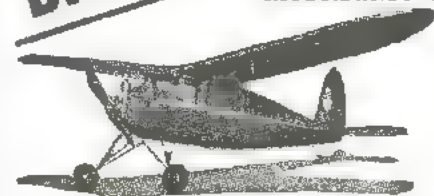
The gaudy Messerschmitt twisted once, hoiked, whereupon Crash let out a howl and gave him another fusillade. Then as he darted in again at the three speeding ships, from somewhere above a topping, twisting figure of a man plummeted head over heels past his vision. Entangled in the shrouds of a parachute, the man hurtled directly between the Hellion and the onrushing Messerschmitts!

Crash gasped. Then the fighting planes fanged past him, just off his port elevator, and made him turn sharply.

From nowhere, another wrecked Messerschmitt now plunged into the scene—to explode in mid-air and scatter dismembered dural all over the sky. Without pausing, however, Crash set the flaps and prop blades back and went into action with a mad war cry. The Yata-ghan was faltering, and his wing-men, surprised by the explosion flitted out of position.

Crash took this heaven-sent opportunity and picked one off as a farmer spears a shock of hay. It struggled under the flailing, jerked—then nosed down with a dead man at its stick.

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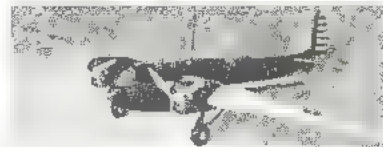
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highway," Chuck Sisto, who was my "passenger," said.

I turned the wheel nearly all the way over to the left.

"Hey! That's too far," he laughed as we almost went into a vertical turn. "Bring it back a ways!" So I turned the wheel to the right again and we were soon headed along over the highway.

We followed it for two or three miles, then banked and headed for the mountains which parallel the north edge of the field. And as we got closer to them, I began to wonder whether I was expected to fly through solid rock—for I was sure we didn't have enough altitude to clear them. However, Chuck told me to bank again and we flew beside them.

At this part of the hop, I could look down and see the hills of jagged rock no more than a few hundred feet below. The air was rather bumpy that day, too; so I was relieved when the pilot told me to turn and head back.

Soon we glided down with the engine idling—and I knew we were facing the hardest part. I was right. Just when we reached the 300 feet altitude, our right wing dropped. Anxiously, I hauled the wheel over in the opposite direction—too far. Up came the right wing, and down went the left! Quickly, I hauled the other way on the wheel—and again I over-controlled!

All this time, we were getting lower and lower. I forced myself to keep calm. And finally I got the wings level.

"Now then, ease it back just a little more . . . There now, hold it!" Chuck said. And even though I do say so myself, it wasn't a bad landing. The little ship settled onto the field like it was made of velvet. And that's all there was to it.

A second or so later, Chuck gunned the ship and we taxied to where my Dad was waiting for me.

It was just a short flight of course.

But I'll remember it for the rest of my life. And Dad has promised that maybe, in the not too far distant future, I can take some regular instruction.

Yes, the private flying game has gained another staunch and loyal booster. And if you ask me, no truer words were ever spoken than when Chet Macklin, George Lyle's swell character, told Jack Conroy that it's "the grandest game in the world!"

Meanwhile, I sincerely hope that my experience may stimulate other ambitious fellows to get started on their way to a pilot's ticket—the same as it has me.

JOHN SILLETTO
North Hollywood, Calif.

We don't doubt that it will, Johnnie. So we thank you for your swell letter—and we'll have a \$2 check on the way to you right away to put toward your first hour of instruction.

Happy Hunning Grounds

(Continued from page 14)

er heard of soap, an'—"

"Who's that, Garrity?" a gruff voice blustered. "Who—?"

The Old Man's nerves were singing. "Maybe it's mice," he ground out sarcastically. "If I get my hands on that baboon, I'll—er—what was it we were saying? Where were we, gentlemen? Er—yes, I agree with you. If the Turks and the Chinese join up with—"

The Colonel got up, jerked at his tunic, and snorted pompously: "If you are drunk, Major, I will certainly report."

"I am as sober as you are!" Garrity protested. "But you've got the right idea. I think I will get me two bottles of cognac and guzzle 'til I'm as stiff as a had-dock!"

"You have your orders, Major. I want accurate information regarding those Russians. Good day to you." The brass hats stalked out, leaving the Old Man in a rank humor, and Phineas Pinkham hustled out of range of the Major's wrath, wondering how the Krauts' morale was holding up.

Phineas should have been given a chance to look in on a pow-wow of Prussians that was going on near Metz. The conclave took their skull practice on the drome of *Stuffel 8*, Imperial Heinie Air Force. Three Vons sat in listening to what they were going to do about the coming of the Red Men to palpitating Europe.

"Imperatiff idt ist, chentlemen," boomed a big Kraut general, "dat ve gedt proof uf der Indians beinck across der lines already, fa! Der books I haff read vhat says der Indians liff by der vigvarms and cook outside der doors yedt. Der fazes dey paint and put der feathers in der hair yedt. Findt idt der drome vhere ist der Amerikaner savages und ve drop der bombs down yedt already."

"Ja Wöhl!" a tall, bony Von said shakily. "But iff idt gedts der engine trouble und ve haff to landt behind der lincs—ve gedt burnt oop by der stake

yedt. Ach, Gott! Against der rules of var ist das. Der scalping und—"

"Scalps?" sniffed the Prussian brass hat to his bald compatriot in an attempt at levity. "Vhere ist der hair by der headt, von Spielz, hain? You s-s-scared of der A-Ameri-ck-kaner s-s-savages, kein? Gott, if they shouldt gedt by Chermanny yedt! Das ist alles, ch-chentlemen. H-h-hock d-der K-Kaiser!"

"H-h-hock!" tremored the assemblage.

IN HIS HUT at the Ninth Pursuit, Phineas was fiddling with a bunch of yellowish hair. It was hair that might well have adorned the head of a well-born Junker. Phineas was sewing it to a square of old felt that he had stained with dark, evil-tasting medicine that his Aunt Carrie had sent him from Waterloo, Iowa.

No sooner had he completed the job to his satisfaction, when the call came to go up in the scraposphere with Captain Howell. On his way to his Spad, Phineas tied a large iron bolt to the object he carried and then shoved it into the pocket of his leather coat.

"Spotted Elk he come," the plotter mumbled. "Big Chief take up thunder wagon an' make war medicine. Ugh! Haw-w-w-w! Now when I get back, if ever, I will go to work with that cognac I have been savin' up."

Before the Spads took off, Garrity drove off the drome in the Squadron car. Sergeant Casey told Lieutenant Pinkham that the Old Man was going to Chaumont for a day or two and that Captain Howell was in command until the Major got back. And Phineas found that out for sure when Howell roared at him: "Hop into that bus, Pinkham, or I'll break you down to a mule skinner! I'm boss around here, and if you just talk back to me once—"

"Yessir," Phineas said aloud. To himself he grumbled. "The big bum! On well, cognac will soften him up."

The object of the patrol was well

known to the pilot from Iowa. The Spads were going over to get a gander at the Jerry back area. If Russians were in evidence there, they would easily be tagged. That was what the brass hats had said.

Twenty minutes afterward, three Spads came back to the Ninth as full of holes as the aibi of a confirmed crook. One of Howell's buzzards had missed making the field by seven miles. Another had stayed in Germany.

Lieutenant Gillis got out of his chariot, plopped down on his knees, and ate some dirt. "Nothin' ever looked or tasted better to me," he declared. "An' oh, for a drink!"

Howell, acting C. O., had to lean against the side of his Spad until his teeth stopped rattling themselves loose from his gums. Phineas strolled up, digging his finger into a bullet furrow in his helmet. "Boys, that was close," the patriot from Boonetown yipped. "Listen, Howell, I've got two bottles of cognac in my—"

"Run!" Howell suddenly broke in. "There's a Boche!"

HR-R-R-RO-O-O-OM! KER-WHANG! BO-O-OM! BLA-A-ANG!

TEN MINUTES LATER the three crawled out of a bomb-proof dugout and Howell quavered: "Pinkham, you s-said y-y you had s-some c-c-coneyac. Wh-where is it? I am in c-charge here. I d-demand you shell out and—"

"I am goin' to stay boiled for a week." Bump quaked. "When I th-think of wh-what th-them H-Heinies are d-doin' t-to S-Shm Elliot about n-now, I—I—"

They followed Phineas to his hut and set about destroying the Pinkham supply of Frog giggle juice. Not too obviously the Boonetown pilot steered clear of the drinks himself, so at the end of the session he was in complete charge of his faculties. Captain Howell and Lieutenant Gillis, however, were changed men.

"B bring on the Boches!" Howell

"G-Garrity, the Brigadier choked out. "Wh-what's the m-meaning of this? They're painted up like—Major, there aren't any Indians in France. This is—"

Ignoring him, the Old Man climbed the fence and hurried across the field. There one painted figure wrapped in a blanket stopped war dancing and stood eying him. Major Garrity felt his spine curl up and his hair stand on end—until he saw a double row of teeth flash.

"Pinkham—y-you—"

"How!" Phineas replied. "What does Pale Face want? Have a care, as we are as many as the trouts in the streams, Ugh!"

"You'll get shot for this," the C. O. bellowed. "And who are those two fat-heads with you? What? Listen here—oh-h-h-h, cripes! Pinkham, I'll—"

"Shh h-h-h," Phineas hushed him, looking toward headquarters. "There is a Kraut over there that has been brought in. We are goin' to scare the liver out of the bum, Major. Don't you see? It is to break down Heinie morale that we are doin' this. We will tell him he is going to be scalped an' burnt at

the stake if he don't own up about the Russians. The Krauts have been scarin' us with pictures an'—"

"Ah—er—I will not be a part to such a—you are all under arrest—you an'—"

"Tight-in-the-Wad and Sour-in-the-Puss. They are heap brave warriors," Phineas said seriously. "Look at the Heinie over there, as he is so scared he can't stand up. Come on, Bump. *Wha-a-a-a-h-o-o-uah-h! Ye-e-e-e-o-o-o-o-o*"

The Brigadier, who had come up meanwhile, scratched his head. "Pinkham, I know you are crazy now," he declared. "But—er—confound it, man, I think it's not a bad idea. Ha! Ha! Major, if this will get us the information we need regarding the Russians, I believe it is worth it."

"Ugh!" Phineas grunted. "We go an' get palefaced Heinie bum. Get butcher knife, Bump, ugh!"

"I go," Bump Gillis said, shocked cold sober. "Ugh! Pinkham, I am goin' to get hunk! You got us boiled, an' "

Captain Howell picked up a rock, but the Old Man took it away from him. "You started this Wild West show, Cap-

tain," he said. "Let me see you finish it, ha-a-ah!"

"I'll kill him yet," Howell promised. But he wrapped his blanket around him again.

The three painted buzzards went over to Headquarters and grabbed the little Von

"*Himmel — Kamerad! Nein — nein! Gott, der scalp you vant, ja? Ach, Gott! In der name of you would not burn me oop yedt, hein? Das ist barbarous. Das ist — Kamerad!*"

"Ugh!" grunted Phineas and he flourished his butcher knife. "Take pale face to stake an' build heap big fire. I get scalp before he go happy hunting ground. Chief Spotted Elk has spoke!"

TWO HEINIE Pfalz ships droned

over the Indian Reservation just as the captive Von was being tied to an improvised stake. And they swung back home in a hurry after one look at the layout downstairs. "Ach, der Indians haff come! *Donnervetter!*" one of the Vons gulped, almost shaking out of his pit. "Burnink oop der brizoner vunce. *Himmel! Der army I vill leaf and go home. Mit der top off mein headt, mein Frauen runs off from me yedt and — Ach Got!*"

"Look at pale face eagles go!" gloated Phineas, pointing up at the sky. "Ugh! Heap afraid of Spotted Elk's braves. And how!" Then he stepped close to the C. O. and whispered: "You tell the Heinie you can talk Indian—and if he will tell about the Russians you will tell me to let him go."

The Old Man growled at Phineas, but he walked to where the Teuton was bound to a stake. "Open up, Fritz," he said. "How many Russians are behind the lines? I can talk this Indian gibberish. I'll have Big Chief Spotted Elk let you go if you will spill all you know. Hurry up or you'll be barbecued by sundown"

"*Ja wohl! Der Russians ist—*"

Phineas was getting up after placing an armful of dry wood at the feet of the little Heinie. His Indian locks caught on a snag sticking out from the stake and were torn loose revealing the rusty Pinkham thatch. The Kraut spotted it and he let out a yelp of joy and relief

"*Zo! Das ist der trig, hein? Ho ho! Amerikaner flyers mit der Indian paint vunce. Bah-h-h-h! I would not tell about der Russians now. I bedt you I am loogkink at Herr Leutnant Pinkham, ja!*"

"Ah er—" Phineas gulped. "Aw-right, you Kraut bum! I "

Major Garrity gave Chief Spotted Elk a swift kick in the slats. Phineas said "Ugh," and he meant it. "You fathead!" roared the Old Man. "Messed it up, huh? You're through playing Indian, you freckled baboon. Get out of here! Get to your hut and stay there! You, too, Gillis! And, you, Howell! I thought you two had more brains than to let this halfwit—"

"We got dr—"

Howell kicked Gillis' shins and from deep down in his throat boomed: "Shut up, dope! Do you want to make it any worse?"

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"Hoi! Hoi!" gurgled the Jerry. "Is Red Men in der var, hein? Das ist funny, nein? Hoi! Hoi! Ha! Ha!"

Lieutenant Pinkham thereupon belted the prisoner in the chops. Then the Brigadier told the joker he would have to answer to charges for abusing prisoners, and Chief Spotted Elk trudged off the reservation quite discouraged, dragging his horse blanket behind him.

But Chief Spotted Elk and his two braves had not played Indian in vain. Over in the headquarters of *Staffel 8*, near Ars, two white-faced Vons were reporting to their Herr Oberst.

"Ein hunderdt vigvams und five hunderdt Indians, *Excellenz!*" one coughed up. "Der var dance dey vas dancink und fires vas burnink efer-where, und—"

"Ach, Heinrich, das vas ein t'ousandt vigvams. Der Indians vas efer-where, *Excellenz!* Like der flies mit der garbage wagon. I bedt you der was five t'ousandt Indians. Und at der stake already yedt for der roastink vas ein brizoner. Ein Cherman—"

"Gott in Himmel!" groaned the Squadron Kommander. "Donnervetter! Der High Kommand I call *geschnell*, ja! Go yedt. I haff to think vunce. Donner und Blitzen!"

FIVE MILES away Heinies were scheduled to take off in a Gotha to bomb a Yankee ammo dump that night. Half of the crew got hold of some cordite and chewed at it vigorously, then reported to Kraut medics and showed unnatural heart actions. The jittery Huns were excused and the bombing was delayed. Near Mont Sec, in a dugout, a Jerry *Ober-Leutnant* stared at the blond scalp that had been brought to him earlier in the day. He looked at the dark stains on the dried hirsute object and shuddered.

"Some brafe Cherman," he groaned. "Ach, das ist against der rules of var. Scalpink und—der Kaiser vill make der protest, ja! Already yedt der men by der trenches ist afraid of der Amerikaner Indians. Mit der morale uf der army goink oop to liddle bieecs—*Himmel!*" He reached for a phone and his pudgy fingers shook on the instrument.

The news of the coming of thousands of Red Men to France was spreading over the Heine sector like fire in a celluloid factory while Phineas Pinkham brooded in his Nissan. All the next day the Teuton troops huddled together and contemplated chucking the whole business. The Kaiser could not shoot a million men, they told one another. Getting shot was one thing. Getting scalped alive was another.

So by dusk of that day, the morale of the Jerries was as low as a duck's vest. Boche planes shied from Allied skies and Heine brass hats gnawed their fingers to the bone.

Phineas Pinkham, charged with raiding a Frog peasant's farm among a dozen other things, decided to take the bull by the horns. He had been thinking things over while being glued to the ground, and he had come to the conclusion that things were not half as bad as they seemed. He bearded Garrity in his den, his face still wearing its war paint,

and he did not give the C. O. a chance to open his mouth for fully ten minutes.

"Just because one squarehead knows we are fake Indians, it is no sign the Dutch bums back of the lines know it. Did you see them Heine Pfalz jobs turn tail yesterday, huh? Anyways, if we do not find out about the Russians, the age limit for the draft will be raised over in the United States. And that will mean that my Uncle Horace will have to join the army, and he has got eleven kids. I am volunteerin' to go over tonight an' risk my life to find out for sure if the Krauts are doin' a Russian business. Chief Spotted Elk has spoke. He will take war path and—"

Old Man Garrity thought it was a good idea. And there was a swell chance that the Boontown pilot would get tagged for the Happy Hunting Grounds. "Go ahead, Pinkham," he said. "What can I lose, huh? One thing I do know—I am getting out of the Order of Red Men as soon as I get back to the States. Now get out of here."

"All I ask is for you to have some Allied crates ready to hop off about four in the A. M.," Phineas said. "Have them meet me over Savant, as I will lead the pale faces from Potsdam into an ambush."

The Major threw his hands up in the air. But Phineas, satisfied, went to his hut and prepared for action. He put a fresh paint job on his face, covered his hands with iodine, and fashioned a more convincing Indian coiffure. Then he went over to the hangar and called for Sergeant Casey. The non-com came out from behind a Spad and eyed Lieutenant Pinkham sourly.

"Paint for thunder wagon," Phineas grunted. "Ugh! Make it heap snappy, comprency? Spotted Elk has spoke."

"Spotted Elk is heap nutty," Casey snorted. But he obeyed the Pinkham order.

Half an hour later, the Spad was ready for the air well decorated with pictures of animals, wigwams, and war hatchets. Lieutenant Pinkham walked to his thunder bird wrapped in a horse blanket and the buzzards of the Ninth crowded around to see the take-off.

"You've got everythin' you need but a straight jacket, you crackpot," Howell told him.

"Pale face bum makem Spotted Elk heap mad," Phineas erupted indignantly. "Maybe splittem skull with war hatchet, ugh! Adoo. Goem happy hunting ground, haw-w-w!"

Major Garrity sat on the doorstep of the Frog farmhouse wondering at his own mental status. As he watched the Spad take off, the Equipment Officer came up and asked him a question.

"Ugh!" Garrity grunted, startled. "What does pale face w—er—cr-i-i-pes! He's got me doing it. Shut up and leave me alone!" He got up and tramped inside yelling for Glad Tidings Goomer. The Old Man felt very much in need of his bottle.

NEAR CHEMINOT in Alsace there was a Heine Gotha outfit. Just a half mile from that drome there was a flock of Kraut infantry having a recess from the shell shellacked advance

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ditches. Phineas Pinkham, alias Chief Spotted Elk, spotted the enemy concentration just as two bat flyers spotted him. The sun had not quite knocked off work for the day and so the Krauts got a good look at the pictures painted on Spotted Elk's thunder wagon.

"*D-der Amerikaner Indian, und in d-der Spadt!*" mumbled the Von shakily, and his Spandau bursts missed the Spad by a mile. Then both Fokker pilots saw the savage with the horribly painted physiognomy raise himself in the pit and point down at the ground, signalling for a fair catch.

Boche Gotha workers swarmed out onto the drome to watch the Spad nose down. A Kraut anti-aircraft crew were all set to throw the works if the strange air wagon made a hostile move.

A big *Herr Oberst*, wearing a spade beard and a monocle, stood in the doorway of the Gotha front office. "*Donner-velter*," he bellowed. "Look oudt vunce. *Das ist der trick* maybe yedt. *Das ist--*"

The Spad hit the field, rolled to a stop. Phineas quickly yanked off his helmet and stuck a feather in the band encircling his head. Then he climbed out of the pit, taking his big horse blanket with him. He wrapped it around his frame with a grandiloquent gesture and strode majestically toward the *Herr Oberst* while scared Krauts gaped like surprised goldfish.

Phineas stopped raised his arm aloft: "How!" he said.

"*Was ist!*" queried the surprised squarehead.

"Chief Spotted Elk comes to see pale faces from Potsdam. For many moons he has waited. Many summers have been mopped up by Manitou since Amerikan pale faces with long rifles stole cornfields from my people. Spotted Elk wants to help great Krau—er—White Papa in Potsdam. Spotted Elk's forefathers, all mighty warriors, do not rest in Happy Hunting Ground. And they will not rest until Indians win back land where beavers once—"

Herr Oberst von Sprudel let the strange visitor's words sink deep into his thick cranium. Von Sprudel had studied American history at Munich and he had read all about Kit Carson and Daniel Boone. He chuckled and stepped out of the doorway. Twenty feet from Chief Spotted Elk he lifted his own hand.

"*Ach, I bedt you by Carlisle you haff coom, kein?*" von Sprudel enthused. "You vant you shouldt get square mit *der Amerikaners, ja?* Welcome, Chief Spotted Elk, *und kunst du in vunce, kein?*"

Fighting off spasms in his backbone, Phineas shook his head. "Chief Spotted Elk cannot breath in white man's tepee. Stay outdoors!" Then he went on: "Over on American side—an eagle's flight from here—is great pale face wigwam full of thunder and lightning. Spotted Elk show white friends who hate pale faces from across water where wigwam is. He lead thunder birds to big wigwam. An hour before Great Manitou pushes sun up. Spotted Elk has spoke!"

Phineas squatted down on the ground, pulled a long-stemmed pipe from his

pocket, touched a match to the filled bowl, and soon was puffing contentedly at the weed. *Herr Obersts* and lesser *offiziers* huddled inside Gotha headquarters. Spotted Elk's eyes kept roving over the Kraut reservation. A car rolled onto the drome and five men got out of it. Phineas Pinkham saw that three of them wore Russky uniforms. For a minute his blood hit sub-zero. Then one of the visitors spoke to a Boche flying officer.

"*Wie Gehts. How ist der black moostache Ich haben, kein? Ich ben Herr Oberst Nickolas Alluvanitch, ha! For der Vaterland I get taken der brisoner und—*"

"Why the big bums!" Phineas grunted to himself. "They are no more Russian than a crock of baked beans. Why—haw-w-w-w!"

Meanwhile *Herr Oberst* von Sprudel told his mates all about American history. He had no doubts about the fact that Chief Spotted Elk had seen a chance to avenge his ancestors' difficulties with the old pioneers. But he was not taking any chances. Chief Spotted Elk would fly in the Gotha and not in his own thunder wagon. Von Sprudel admitted he was pretty smart.

And Chief Spotted Elk felt like going into a faint when the *Herr Oberst* gave him the news. Trying to keep his teeth from clattering, Phineas nodded his dome and said: "Ugh! Anyway Chief Spotted Elk will not ride thunder bird of pale faces across big pond any more. He make present to Big White Father in Potsdam. He have much wampum, too."

The Krauts let the Indian from Boonstown, Iowa, hive up in a makeshift tepee under a big tree almost a mile from the drome. Curious, albeit nervous, Boche doughs ventured close to look at the *Amerikaner* aborigine. Some of them wore Russky suits. Once Chief Spotted Elk made an angry gesture with a hatchet and the squareheads stampeded.

"Chief Spotted Elk wantem sleep!" Phineas roared at them.

But there was no chance of Garrity's cigar store Indian sleeping. It was pretty plain to him that if he went to sleep it might be a permanent snooze. He had gotten himself into as pretty a kettle of smelts as he had ever imagined.

"Well," he sighed, "it is for the dear old U. S. A. I will be in all the history books like Nathan Hale and ugh! It is a long sermon that doesn't end, an' nobody can expect to live forever. Adoo, bums of the 9th. I will see you all in the Happy Huntin' Drome."

FATHER TIME put on a sprint that night. Tempus fugited until at three-forty-five A. M. *Herr Oberst* von Sprudel and a Boche Gotha jockey came over and called to Chief Spotted Elk. They told him that it was time to go over and knock the Allied powder wigwam for a row of Indian totem poles. Chief Spotted Elk said: "It is well. I go. Ugh!"

Five minutes later, Chief Spotted Elk was squatted down Indian fashion on the catwalk of a droning Gotha. Sweat was oozing through the Pinkham war

paint and making tiny rivulets down his face. It occurred to him that even if the Boche bomber was not shot down, it would take him back to the Heinie dome. He wondered how long his paint job would hold out. A good rain wouldn't do it any good. Yes, Phineas had to think faster than he had ever thought before.

He crawled back to the tail of the ship where a Boche machine gunner was crouched. He drew a Frog peasant's hatchet out of his belt and banged the Heinie over the scalp with the flat of the blade. The Boche went to sleep without a fuss. Quickly Phineas took a wad of yellowish hair out of his war bag. It had been well smeared with red lead.

Then, with the fake scalp in one hand, the conked gunner's Luger in the other, Spotted Elk crawled back into the bowels of the ship. The Heinie at the bomb racks turned—and then let out a blood-curdling yell. He saw the gory trophy in Chief Spotted Elk's hand, jumped to conclusions, and tried to jump through the side of the Gotha.

"*Gott in Himmel! Ha-a-ai-p vunce. Der Indian I!*"

A Kraut *Unter-Offizier* came out of the control pit. Phineas covered him with his Luger and holered: "*Wa-a-o-o-owa-a-ah!*" Chief Spotted Elk take war path. He hate all pale faces! He takem scalps. Burn 'em thunderbird. *Ye-e-e-e-ow-w-w-w-w-w!* Spotted Elk learn to shoot pale face gun. He has spoke!" Thereupon Phineas banged a shot into the catwalk and the putty-faced Heinie scrambled back to the business office of the Gotha to tip off the pilot.

"He has scalped *der* gunner, Otto. He ist madt by all der pale fazes *und—uch du Ieber!*"

Meanwhile, Phineas took a hunk of pitch out of his little kit bag and plastered it on the end of the hatchet. He set the gooey stuff afire and panic gripped the Gotha flyers. "Spotted Elk wantem fire," he roared. "Cold up in clouds. Ugh! *Wa-a-a-oo-o-o-owa-a-ah!*"

"Down vunce Otto, *Der* bombs vill—*Gott!*"

"*Jal* Before ve gedt idt *der* scalps kaput!"

BLAM! BLOOEY! KERWHAN-N-NG! Bombs left the racks and went down to dig huge divots out of Frog fairways. The Heinie at the toggles finally got rid of the last big egg and leaped at the aborigine from Iowa. Phineas slugged him and dragged him back toward the tail of the ship. Then he let out another warwhoop and took another fake scalp out of his bag.

"Chief Spotted Elk havem two scalps. Getem heap more. Setem thunder bird on fire. Getem all pale faces!"

ALLIED ambushing pilots were only five hundred feet up when they heard the double-yoked Kraut eggs break up three miles from Savant. They saw the Gotha heading for the lincolnum in a hurry, and they knew they had been saved a lot of work for some reason as yet unexplained. When a Yank motor-bikeman reached the scene of the Gotha's St. Vitus crackup, he found a Heinie

walking around in circles as if he had lost something. Chief Spotted Elk was sitting on the Gotha's tail smoking a Calumet pipe.

"It's an Injun!" yelled a dough. "Cripes!"

"Don't be silly!" Phineas chided him. "Haw-w-w-w! Get me an auto, as I want to get word to Chaumont about the Russians. Getem pale face pep-water buggy heap quick. Did I fool these squareheads, oh boy! Tricks they want, huh? Well, a Pinkham—"

The cat was out of the bag. A half hour later, Chaumont's brain trusters were hep to the Heinie trick. The Boche had planted Russian-suited squareheads where they would be taken prisoner. The Potsdam Kommand had figured that the Allies would pull men out of one part of the line to put them into the sector where Russians were

believed to be heavily concentrating.

PHINEAS PINKHAM arrived at the Ninth still wrapped up in his horse blanket. His feathers were slightly frazzled, and one hung awry over his face. But he was in high spirits. The Old Man and visiting brass hats wanted to know his desire. Just ask, they beamed.

While Captain Howell, Lieutenant Bump Gillis, and the other pilots stood open-mouthed, Chief Spotted Elk struck a dramatic pose and grunted: "Want two months wampum in advance. Take trail to Paree. See squaws. Ugh! Maybe drinkem frog sparkle water. Spotted Elk has spoke!"

Major Rufus Garrity fell into a chair and held his head in his hands. "I want to resign," he moaned. "I can't stand any more."

Aero Book Review

(Continued from page 25)

sky fear—the fear of flying over enemy territory, the shudders accompanying forced landings in mountain ravines, and the risk of bomb-carrying. For this is the story of night bombing.

The nearest comparison we have found to this fine work is *Night Raiders of the Air*, by A. R. Kingsford, an Australian who told of his experiences with No. 100 Squadron on night raids into Germany. But this is Italy and Austria, not France and Germany; and there is a great difference—the difference between the Alps and the rolling terrain in front of Metz. Everything is different—the names of towns, the types of ships, and the day-by-day patter of the Italians who flew with these American lads.

Here, new scenes are in store for you from the day they start taking solo hops in Farmans, "pass out" on old Caudrons, and test their nerves on S.A.I. two-seaters, to eventually go "first-line" in two-engined Caproni bombers. They lived and died the same as the Spad flyers in France. Their raids from Italian points out across the Piave

were thrillers, and practically all their attacks were carried out in the moonless dark of night.

Bombing . . . night raids . . . machine-gunning enemy fields! Night after night, it goes on. And what is lost by lack of enemy competition from single-seat fighters is more than made up in the terrors of getting lost, seeking searchlight beacon markers, and remembering the nightly code signal before one dare land back on his own drome.

Willis Fitch tells his story well. You quickly grow to like him, particularly through his frank companionship with his father, via letters back and forth from America. Fitch goes through the whole show, getting wounded, lost, and eventually decorated. Like you and me, he's a fellow who has his own ideas. And that makes for good reading.

Yes, *Wings In the Night* should be put on your Christmas gift list, buzzards, for it's swell wartime stuff. And we hasten to mention the fine book jacket by Clayton Knight and the many revealing photographs. The book sells for \$2.00 and it's worth every cent of it.

Fly This Goliwhopper Tripe

(Continued from page 40)

a slight sandpapering should be given, especially on the top surfaces of the wings to improve the lift.

For the tail surfaces, light 1/32" sheet should be used to help keep the center of gravity around the wing position.

The wing mount is made of 1/32" sheet. A line is drawn at the center and the balsa is cracked along the line to give the same amount of dihedral as the center wing (see plan). Glue it securely in place on the motor stick. Refer to the photograph at the head of this article for pointers.

At this stage the builder should also check the drawings to help clear up any difficulties.

The wing struts are made of 1/32" bamboo. They are forced through the wings at the designated places. A drop

of cement at each joint will suffice. Remember that all horizontal surfaces should be parallel to the motor stick (which happens to be the most convenient thing to measure by).

A good prop can be carved from a block 1/4" by 11/16" by 6". The Goliwhopper will perform with 'most any prop of that diameter which may happen to be lying around. At least two washers should be used between the prop and the thrust-bearing. It is a good idea to put a drop of oil between the washers. The prop shaft is bent from .024 wire.

ADJUSTING AND FLYING

BROWN RUBBER—the flat 1/4" con-test kind is used as power. Two strands will be plenty. Lubricate it slightly, and use a winder.

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3/8" x 3/8" x 3/8" 3c	
1/4" x 1/4" x 1/4" 2c	
THURST BEARINGS	
1/2" dia. 5c	
3/8" dia. 3c	
1/4" dia. 2c	
NOSE BLOCKS	
1/2" dia. 1c	
3/8" dia. 1c	
1/4" dia. 1c	
TISSUE, AA	
1/2" x 1/2" x 1/2" 5c	
3/8" x 3/8" x 3/8" 3c	
1/4" x 1/4" x 1/4" 2c	
ALUM. TUBING	
1/2" dia. ft. 15c	
3/8" dia. ft. 18c	
1/4" dia. ft. 12c	
WIRE	
1/16 dia. 5 ft. 12	
3/32 dia. 5 ft. 15	
1/8 dia. 5 ft. 20	

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WINGS IN THE NIGHT

By Willis S. Fitch

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If the ship stalls—which is a habit common to many small models—try bending in the thrust-bearing slightly or adding a little weight to the nose. If the model decides to dive, warp the trailing edge of the elevator up a little bit more.

Happy Landings

(Continued from page 26)

Rickenbacker in those days was no physical giant—but he had a cool-calculating intellect.

McCudden, a former gunner, also had a good mind and knew how to use it. Mickey Mannock had the good old gray matter Umph! regardless of the fact that he had a bad lung and but one good eye. Bishop was highly educated in mathematics. And as for the Germans—von Richthofen, Boelke, Wolff, Schaefer, Immelman, and Voss—they, too, were of the highly-schooled types. Then there's the case of Luke, the Balloon Buster. He was a college man with a brain that—if he'd played it right—would have made him the greatest air fighter of them all.

ALL THIS adds up to the undeniable fact that while you may boast of an exam-passing body and are capable of learning the fundamentals of flying, you could never make the grade in one of our Service schools unless you can think, can think quickly, and have the educational background providing the factual and systematic medium in which to do your thinking.

As for making these stringent educational requirements, the powers-that-be do not demand "two years of college or its equivalent" because they want college material. No, that's not the point. The thing is that they have to have men of that caliber to form the comparatively small nucleus which is our peacetime Air Force. The perfection of the draft flyers in time of war depends on the perfection of this nucleus of top-notch skymen—these men who are well-educated, who are leaders, who are decisive in their thinking both in the air and on the ground.

What's more, thousands of dollars of tax-payers' money must be spent in training each and every one of these super-expert airmen. So you can't blame them if they don't make the decidedly speculative and uneconomical move of lowering the entrance barriers to allow the fellows with only "fair educations and who can pass the physical tests" to get in. That would amount to lowering the standards—and certainly none of us want that.

Nevertheless, the case of our letter writer still remains a problem. We wish something could be done for lads of his type. We wish our modern society was geared to provide the necessary extra educational training for these youths who can prove they have the requisite native ability. And meanwhile, we hope that the recently publicized American "youth air movement" (see your April FLYING ACES) really gets going and gives all our air-minded fellows a "break."

Other countries have faced this diffi-

Various types of flights can be obtained by warping the tail surfaces.

And now your tri-winged *Goliwhopper* should be ready to "go to town." And if "town" is too far away, remember this job is good either for indoor or outdoor flying. S'long!

cult problem, too. In the British service, they are continuing the experiment of taking worthy lads and training them as sergeant-pilots. But we can tell you that R.A.F. reports indicate that sergeant-pilots are all too frequently deemed responsible for miscalculations and crashes. The "Flying Accidents" columns in the British aero weeklies tell the story, and we'd say this supports the argument that the high-education requirements are plenty important in military flying.

The only answer is to make the needed preliminary educational training more blankety available to our teenage youngsters.

Perhaps these few words will help many of you readers to consider the situation in its true light. Knowing the thrill of the military cockpit and the pride of wearing "wings," we truly sympathize with those of you who lack the educational opportunities. But the men who draft our Air Service requirements do know what they are doing. And you'll find your greatest pride in getting in by mastering those requirements rather than by having them cut the hurdles down to your size.

Answers

TO QUESTIONS ON PAGE 24

- 1—Mickey Mannock, had sight in but one eye. He was the most noted of several war-time airmen who had defective sight.
- 2—The Frenchman, Guynemer, and the German, Wolff, both were victims of tuberculosis when they were at the height of their war careers.
- 3—Regular British machine gun caliber is .303 whereas American guns are bored for the .30 caliber bullet.
- 4—E. T. Willows was an expert British airship builder of which very little has been written. He was killed in a balloon crash in 1927.
- 5—Precipitation is the weatherman's term for the forms in which water may fall after condensation from the atmosphere. It actually means rain, drizzle, hail, snow, or sleet.
- 6—Pre-ignition is the ignition of a charge before it is fired by the spark plug. It is usually caused by some overheated part, such as the base of the spark plug or the exhaust valve.
- 7—Howard Hughes used a Lockheed 14—a special form of the Electra—on his 'round-the-world flight.
- 8—A spot-landing is a landing in which the pilot attempts to bring his ship down and to a stop within a small circle, or near a marked target, on the ground.
- 9—The Lewis gun originally used a flat, shallow drum carrying 47 pounds. The air-version of the weapon was equipped with a deeper drum carrying 97 rounds.
- 10—The Gwinn "Aircar" last flown by Frank Hawks was powered by the British 100-hp radial engine developing 85 h. p.

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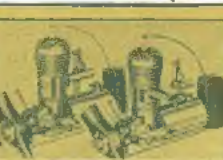
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